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Hiſtory of the Inoculation of the Cow-pox.

[Continued from page 217 of our laſt.]

Further Obſervations on the Variolæ Vaccinæ, or Cow-pox: By EDWARD JENNER, M.D. F.R.S. F.L.S, *&c. 4to.* 64 *Pages.* 2*s.* 6*d.* Law, *&c.*

IN his firſt publication, Dr. JENNER's principal object appears to have been to excite an extenſive inquiry into the origin, nature, and effects of the cow-pox. In this he has completely ſucceeded.

There is not, perhaps, in the annals of medicine, to be found an example of an experiment or inquiry, where the life and health of ſuch numbers already born, and of all to be born, were implicated, that has been taken up more generally, received more candidly, or conducted more prudently, than this concerning the cow-pox.

In this ſecond work it appears to be the author's principal concern, to guard the inquiry againſt miſrepreſentations, and inferences drawn from inſufficient premiſes.

The following are the moſt important ſubjects introduced in it, viz.

1. The means of diſtinguiſhing the *real cow-pox* in the brute or human ſubject; and thereby of preventing the "unpleaſant conſequences" that might enſue, from confounding it with a *ſpurious diſeaſe*, which may have no power to defend the patients from the contagion of the ſmall-pox.

2. As the inoculated cow-pox very rarely produces any anxiety in the patient or practitioner, unleſs perhaps in a few inſtances, reſpecting the local inflammation of the arm; Dr. Jenner ſolicits the attention of his brethren to the beſt mode of treating this ſpecies of erythema; and ſuggeſts ſome hints that the conſtitutional diſeaſe, on this, and other occaſions, may be much modified by a modification of the local affection.

3. Some additional arguments are adduced, to prove that the variolæ vaccinæ are derived from the horſe; and that the diſeaſe is contagious only by inoculation.

4. An inquiry into the cause of the variety which has been obſerved in a few caſes of children inoculated in London, where an eruption appeared on the body, &c. reſembling the ſmall-pox.

Dr. Jenner introduces his work with the following account of his views in its publication.

" Although it has not been in my power to extend the inquiry into the cauſes and effects of the variolæ vaccinæ much beyond its original limits, yet, perceiving that it is beginning to excite a general ſpirit of inveſtigation, I think it of importance, without delay, to communicate ſuch facts as have ſince occured, and to point out the fallacious ſources from whence a diſeaſe, imitative of the true variolæ vaccinæ, might ariſe, with the view of preventing thoſe who may inoculate, from producing a ſpurious diſeaſe; and further, to enforce the precaution ſuggeſted in the former treatiſe, on the ſubject of ſubduing the inoculated puſtule as ſoon as it has ſufficiently produced its influence on the conſtitution. From a want of due diſcrimination of the real exiſtence of the diſeaſe, either in the brute or in the human ſubject, and alſo of that ſtage of it in which it is capable of producing the change in the animal economy, which renders it unſuſceptible of the contagion of the ſmall-pox, unpleaſant conſequences might enſue, the ſource of which, perhaps, might not be ſuſpected by one inexperienced in conducting ſuch experiments.

" Ere I proceed, let me be permitted to obſerve, that truth, in this and every other phyſiological inquiry that has occupied my attention, has ever been the object of my purſuit; and ſhould it appear in the preſent inſtance, that I have been led into error, fond as I may appear of the offspring of my labours, I had rather ſee it periſh at once, than exiſt and do a public injury.

" I ſhall proceed to enumerate the ſources, or what appear to me as ſuch, of a ſpurious cow-pox.

" 1ſt. That ariſing from puſtules on the nipples or udder of the cow, which puſtules contain no ſpecific virus.

" 2dly. From matter (although originally poſſeſſing the ſpecific virus) which has ſuffered a decompoſition, either from putrefaction, or from any other cauſe leſs obvious to the ſenſes.

" 3dly. From matter taken from an ulcer in an advanced ſtage, which ulcer aroſe from a true cow-pox.

" 4thly. From matter produced on the human ſkin from contact with ſome peculiar morbid matter generated by a horſe.

" On

" On theſe ſubjects I ſhall offer ſome comments.

" One of the firſt objects of this purſuit ſhould be, to learn how to diſtinguiſh with accuracy between that peculiar puſtule which is the *true* cow-pox, and that which is ſpurious. Until experience has determined this, we view our object through a miſt. Let us for inſtance ſuppoſe, that the ſmall-pox and the chicken-pox were at the ſame time to ſpread among the inhabitants of a country, which had never been viſited by *either of theſe diſtempers*, and where they were quite unknown before; what confuſion would ariſe! The patient who had gone through the chicken-pox to any extent, would feel equally eaſy with regard to his future ſecurity from the ſmall-pox, as the perſon who had actually paſſed through that diſeaſe. Time and future obſervation would draw the line of diſtinction. So I preſume it will be with the cow pox, until it is more generally underſtood. All cavilling therefore, on the mere report of thoſe who *tell us* they have had this diſtemper, and are afterwards found to be ſuſceptible of the ſmall-pox, ſhould be ſuſpended. To illuſtrate this, I beg leave to give the following hiſtory:

Dr. Jenner then details a caſe of a young woman, who took the cow-pox, as ſhe ſuppoſed, by milking infected cows, and afterwards experienced the ſmall-pox. This caſe is ſo ſimilar to thoſe which have been lately mentioned in converſation, as proofs of the inefficacy of the variolæ vaccinæ to protect the ſyſtem from the ſmall-pox, that little or no doubt can remain of their identity; and ſufficiently proves, on what ſlight evidence popular rumours are commonly founded. Dr. Jenner obſerves:—" Had any one converſant with the habits of the diſeaſe, heard this hiſtory, he would have had no heſitation in pronouncing it a caſe of *ſpurious* cow-pox.

" This is, perhaps, the moſt deceptious form in which an eruptive diſeaſe can be communicated from the cow, and it certainly requires ſome attention in diſcriminating it. The moſt perfect criterion by which the judgment may be guided is, perhaps, that adopted by thoſe who attend infected cattle. Theſe white bliſters on the nipples, ſay they, *never eat into the fleſhy parts*, like thoſe which are commonly of a bluiſh caſt, and which conſtitute the *true cow-pox*, but that they affect the ſkin only, quickly end in ſcabs, and are not nearly ſo infectious." P. 8.

On the *ſecond* ſource of diſappointments and falſe inferences, Dr. Jenner ſays:—" I conſider it of very great importance, and I could wiſh it to be ſtrongly impreſſed on the minds of all who may be diſpoſed to conclude haſtily on my obſervations, that *imperfect variolous matter* will, by inoculation, produce a diſeaſe, but not ſuch an one as will render th[illegible]

unſu[illegible]

unſuſceptible of the *ſmall-pox.*" This opinion is ſupported by a reference to a conſiderable number of facts, ſome mentioned in the author's firſt treatiſe, others in the Memoirs of the Medical Society of London, vol. iv. and ſeveral in the preſent publication.

Thirdly. "That the firſt-formed virus, or what conſtitutes the true cow-pox puſtule, invariably poſſeſſes the power I have aſcribed to it, namely, that of affecting the conſtitution with a ſpecific diſeaſe, is a truth that no ſubſequent occurrence has yet led me to doubt. But as I am now endeavouring to guard the public as much as poſſible againſt erroneous concluſions, I ſhall obſerve, that when the puſtule has degenerated into an ulcer (to which ſtate it is often diſpoſed to paſs unleſs timely checked), I ſuſpect that matter poſſeſſing very different properties, may ſooner or later be produced; and although it may have paſſed that ſtage, wherein the ſpecific properties of the matter ſecreted are no longer preſent in it, yet when applied to a ſore, as in the caſual way, it might diſpoſe that ſore to ulcerate, and from its irritation the ſyſtem would probably become affected; and thus, by aſſuming ſome of its ſtrongeſt characters, it would imitate the genuine cow-pox." P. 20.

Fourthly. "Whether the cow-pox is a ſpontaneous diſeaſe in the cow, or is to be attributed to matter conveyed to the animal, as I have conceived, from the horſe, is a queſtion, which though I ſhall not now attempt fully to diſcuſs, yet I ſhall digreſs ſo far as to adduce ſome further obſervations, and to give my reaſons more at large, for taking up an opinion that to ſome has appeared fanciful. The aggregate of theſe obſervations, though not amounting to poſitive proof, forms preſumptive evidence of ſo forcible a kind, that I imagine it might on any other perſon have made the ſame impreſſion it did on me, without fixing the imputation of credulity." P. 21.

Dr. Jenner then introduces a number of conſiderations, the weight of which had induced him to adopt this opinion, and which we think abundantly ſufficient to juſtify his giving it to the public.

The next ſubject, which Dr. Jenner thinks of ſufficient importance to demand the particular attention of medical men, is the effect of local applications to the inciſed part. P. 31—59.

"Conceiving theſe caſes to be important, I have given them in detail; firſt, to urge the precaution of uſing ſuch means as may ſtop the progreſs of the puſtule; and, ſecondly, to point out (what appears to be the fact) that the moſt material indiſpoſition, or at leaſt that which is felt moſt ſenſibly, *does not ariſe primarily from the* FIRST ACTION *of the virus on the conſtitution; but that it often comes on, if the puſtule is left to chance, as a ſecondary diſeaſe.*

Although

"Although the application (ung. hydr. nitr.) I have mentioned in the caſe of Mary Hearn (p. 31), proved ſufficient to check the progreſs of ulceration, and prevent any ſecondary ſymptoms, yet, after the puſtule has duly exerted its influence, I ſhould prefer the deſtroying it quickly and effectually to any other mode. The term *cauſtic*, to a tender ear (and I conceive none will feel more intereſted in this inquiry than the anxious guardians of a nurſery), may ſound harſh and unpleaſing; but every ſolicitude that may ariſe on this account will no longer exiſt, when it is underſtood, that the puſtule, in a ſtate fit to be acted upon, is then quite ſuperficial, and that it does not occupy the ſpace of a ſilver penny. I mention eſcharotics for ſtopping the progreſs of the puſtule, becauſe I am acquainted with their efficacy; probably more ſimple means might anſwer the purpoſe quite as well—ſuch as might be found among the mineral and vegetable aſtringents." We are authoriſed to ſay, that Goulard's extract has been found to ſucceed completely.

Dr. Jenner preſents his readers with ſeveral facts, tending to prove, that the arreſting the variolous or vaccine diſeaſe in its progreſs, as ſoon as the ſyſtem is perceived to ſympathiſe with the local affection, does not diminiſh the future ſecurity of the patient.

He inculcates the idea (ſuggeſted in his 'Inquiry,' &c. p. 54), that the diſeaſe may be much modified by attention to the local affection; and hints an opinion, that ſeveral *varieties*, of both diſeaſes, may be produced by a ſkilful attention to the inciſed part of the arm (p. 37); and at p. 39, the author ſums up this part of the ſubject with the following obſervations: —"Seeing that we poſſeſs the means of rendering the action of the ſores mild, which, when left to chance, are capable of producing violent effects—and ſeeing, too, that theſe ſores bear a reſemblance to the ſmall-pox, *eſpecially the confluent*, ſhould it not encourage the hope, that ſome topical application might be uſed with advantage, to counteract the fatal tendency of *that diſeaſe*, when it appears in this terrific form? At what ſtage, or ſtages of the diſeaſe, this may be done with the moſt promiſing expectation of ſucceſs, I will not pretend now to determine; I only throw out this idea as the baſis of future reaſoning and experiment."

Dr. Jenner next ſuggeſts ſome improvements in the *manner* of inſerting the virus in inoculation, and in diſtinguiſhing the beſt time for taking the matter from the puſtule; and adds:—"In the preſent early ſtage of the inquiry (for early it certainly muſt be deemed), before we know for an abſolute certainty, how ſoon the virus of the cow-pox may ſuffer a change in its ſpecific properties, after it has quitted the limpid ſtate it poſſeſſes when forming a puſtule, it would be prudent for thoſe who have been inoculated with it, to ſubmit to variolous inoculation." P. 42.

There

There obviouſly appears to be a difference between ſeveral diſeaſes in London, and the ſame diſeaſes in the country; as eryſipelas, ſcrofula in children, intermittents, &c. and there has appeared a difference in the cow-pox. Dr. Jenner ſays:—“ The principal variation perceptible to me in the action of the vaccine virus generated in London, from that produced in the country, was its proving more certainly infectious, and giving a leſs diſpoſition in the arm to inflame. There appears alſo a greater elevation of the puſtule above the ſurrounding ſkin. In my former caſes, the puſtule produced by the inſertion of the virus was more like one of thoſe which are ſo thickly ſpread over the body in a bad kind of confluent ſmall-pox. This was more like a puſtule of a diſtinct ſmall-pox, except that I ſaw no inſtance of pus being formed in it, the matter remaining limpid till the period of ſcabbing.” P. 62.

Another mark of diſtinction between the variolous and vaccine diſeaſe is mentioned, with a caſe, in p. 63; viz. that the meaſles, which have been obſerved to ſuſpend the action of variolous matter, do not ſuſpend the progreſs of the cow-pox. The author concludes his pamphlet with the following paragraph, the aſſertions of which, we are well aſſured, are corroborated by the experience of every perſon who has practiſed the vaccine inoculation:—

“ The very general inveſtigation that is now taking place, chiefly through inoculation (and I again repeat my earneſt hope, that it may be conducted with that calmneſs and moderation which ſhould ever accompany a philoſophical reſearch), muſt ſoon place the vaccine diſeaſe in its juſt point of view. The reſult of all my trials with the virus on the human ſubject, has been uniform. In every inſtance, the patient who has felt its influence, has completely loſt the ſuſceptibility for the variolous contagion; and theſe inſtances are now become numerous: I conceive that, joined to the obſervations in the former part of this paper, they ſufficiently preclude me from the neceſſity of entering into controverſies with thoſe who have circulated reports adverſe to my aſſertions, on no other evidence than what has been caſually collected.”

The following Letter from Mr. Hughes *to* Dr. Jenner, *arriving too late for inſertion in his Work, has been tranſmitted to us; and our deſire to correct any miſrepreſentation on this ſubject, induced us to inſert it without abridgment.*

Dear Sir,

Some time ago, Mr. Darke informed me, that he had communicated to you an account of the Rev. Mr. Colborne's family, whom he inoculated

lated with the cow-pox matter, procured by your favour. Induced by curiofity, family connection, and a requeft on the part of Mr. and Mrs. Colborne, I attended the family with Mr. Darke; and, perhaps, took a more minute account of the progrefs of the infection than Mr. Darke, at that time fully engaged, could do; and as I fee that this matter has been mifreprefented, I think it right that the public be furnifhed with my evidence on the fubject, which you are at liberty to infert in your next publication, or tranfmit to the Editors of the 'Medical and Phyfical Journal.' I underftand that Mr. Darke omitted to mention his having inoculated his own fervant alfo with the cow-pox matter, thinking it unneceffary; but he has given me leave to notice this inftance likewife, that no part may be omitted.

With the *cow-pox* matter were inoculated Mr. Darke's fervant, Thomas Vick, about feventeen years of age, Mr. Colborne's three children, viz. Mifs Colborne, between three and four years of age, Mifs E. Colborne, between two and three, and Mifs S. Colborne, fifteen months old, and Mr. Colborne's fervant, William King, about fifteen years of age. T. Vick, on the 13th of December, 1798, the day on which the matter was procured—Mr. Colborne's family on the following day; all by a puncture in the *left* arm.

In T. Vick there was a flight inflammation on the fecond day (i. e. the day following that of inoculation, which afterwards diminifhed, fo that by the fixth day hardly any appearance of the puncture remained, but a fmall fcab; in the evening of this day, however, a flight, though florid rednefs came on, accompanied by a fmall pimple or two near the puncture, which difappeared the next day.

In Mifs Colborne there was a diffufed rednefs, to the extent of one fourth of an inch in diameter, with fome hardnefs and elevation of much lefs extent, on the fecond day. This appearance diminifhing, was hardly perceptible by the fixth day, and by the tenth was quite gone. She was thought to be a little heavy on the eighth day, on which pimples appeared on the face and trunk, which died away on the ninth.

In Mifs S. Colborne, there was a flight diffufed inflammation on the fecond day; the rednefs becoming more extenfive, though of a more dufky hue; the hardnefs and elevation diminifhing to the ninth day, when the rednefs was one third of an inch diameter, and nearly covered with a thin fcabby cruft. On the eighth day, a few pimples were difcerned about the face and fcalp, which difappeared the next day. The cruft fell off the arm on the fourteenth, leaving a flight rednefs, fucceeded by a thinner cruft of lefs duration. A pimple appeared near the place of the puncture on the thirteenth, which withered away in two days.

These

These three patients were inoculated with *variolous* matter in the *right* arm; the first on the 20th of December—Miss Colborne and Miss S. Colborne on the 21st (each respectively on the eighth day from the first inoculation with *cow-pox* matter); and in all of them the usual progress of infection from variolous matter took place, both in the appearances and symptoms; so that the axilla of T. Vick was affected on the sixth day from the second inoculation, and in the evening of the seventh the eruptive fever came on, which proved slight, he pursuing his business the whole time, and a few pustules followed. In Miss Colborne the eruptive fever came on in the evening of the seventh, which went off on the ninth, except leaving a slight uneasiness in the axilla, and a slight feverishness for an evening or two more; and ten or twelve pustules followed. Miss S. Colborne ailed on the 10th, and was well on the 12th, and had three or four pustules.

The effects of the first inoculation with *cow-pox* matter, in Miss E. Colborne and W. King, were as follow:—In Miss E. Colborne, the inflammation (which appeared nearly the same on the second day, as in the three above related, gradually increased, so that by the ninth it was of the extent of half an inch in diameter, A scab, which had been repeatedly rubbed off, probably occasioned by the part itching in the night, was renewed. She was observed to be fretful on the eighth day, and on this day two or three pimples, like those of Miss Colborne and Miss S. Colborne, appeared, and disappeared on the ninth. By the tenth, the inflammation was of the extent of a sixpence; the vesication surrounding the scab was about one-sixth of an inch, containing matter, which seemed to be purulent. Hitherto the efflorescence was hardly distinguishable from the redness accompanying the induration of the skin; but by the fifteenth day, when the redness and hardness was of the extent of a shilling, the margin of the efflorescence was of the extent of a crown-piece, and of a bright colour; betwixt which and the redness and induration, was an interval of skin of the natural colour. At this time, the scab falling off, left a sore of one eighth of an inch in diameter, at first superficial, but in three days more got through the skin—the inflammation increased. Cooling, saturnine applications, and ung. hydrag. were applied; by which the inflammation was lessened, but not sufficiently to prevent two small suppurations, a little above the sore occasioned by the puncture, one towards the inside, the other towards the outside of the arm, each of the extent of a shilling, and which were ready to burst on the twenty-sixth day: that on the inside burst soon afterwards, and readily healed; that on the outside, communicating with the sore from the puncture, was kept from bursting some days longer. On the 4th of February (the fifty-second day), neither sore nor induration remained. She had no illness, excepting the slight one mentioned on the

eighth

eighth day; and although the arm undoubtedly teaſed her, ſhe ate her food, and played with her ſiſters, as uſual, the whole time.

In William King, the inflammation which appeared on the ſecond day, nearly as in the other patients, gradually increaſed, as in Miſs E. Colborne' ſo that by the 9th day it was of the extent of one eighth, and the veſication in its centre, one tenth of an inch, with three or four pimples near it. On the 11th day, a conflux of ſmall puſtules uniting with the veſication' the latter by the 15th day was of the extent of one ſixth of an inch, with a ſmall ſcab in its centre; its ſurrounding redneſs and hardneſs of the extent of a ſhilling. The effloreſcence appeared on the 10th day, gradually ſpread till the 15th, growing duller towards the centre, the margin continuing of a bright colour, when it extended one third the circumference of the arm; it had not quite diſappeared on the 18th. On the 8th day, the axilla began to be affected with ſtiffneſs, which continued to the 11th, then abated, and on the 14th went quite off. On the 9th day, he had a ſlight head-ach. On the 18th, the central ſcab put on the appearance of an eſchar; and a day or two afterwards, the ſurrounding induration was of the extent of a half-crown piece; it ſeemed confined to the ſkin, as it was moveable over the muſcles. From this time the induration leſſened, and after the ſeparation of the eſchar, which happened on the 29th, occaſioning a ſore, which, from the thickened ſtate of the ſkin, appeared of the depth of a quarter of an inch; and applying ung. hydrag. ſoon went off, and the ſore healed. His arm was ſo little troubleſome, that he went on with the uſual buſineſs of the houſe the whole time. Perhaps few, if any, practitioners would have been able, by the ſight or touch, to have diſtinguiſhed the ſtate of the arm from that occaſioned by the inſertion of variolous matter previouſly to the 18th day.

Notwithſtanding we were perſuaded that the *cow-pox* matter had taken the deſired effect in Miſs E. Colborne and W. King, the family being ſurrounded by the ſmall-pox, from a general inoculation having taken place, it was thought prudent to inoculate them with *variolous matter*, in the *right* arm, at the ſame time with Miſs C. and Miſs S. Colborne, viz. on the 8th day from the inoculation with *cow-pox* matter. In both, the punctures in the *right* arm inflamed earlier than they uſually do after a firſt inoculation (as is common where a ſecond inoculation is made ſo ſoon after the firſt, where *variolous* matter is uſed): they became ſmall puſtules, without any previous accompanying illneſs, without any affection of the axilla, or ſubſequent puſtules.

These two patients were inoculated a third time on the firſt of January, the [illegible]th day from the ſecond, and 19th from the firſt inoculation, with

limpid *variolous* matter taken from the vesication of the right arm of Miss Colborne, and immediately inserted. This was not followed by any inflammation, the punctures being hardly perceptible either on the 5th or 8th day.

This account of the above patients being given neither from *hearsay evidence*, nor from memory, but from notes taken at the time the observations were made, the reader will judge what credit is due to the *authentic information** procured, and lately published concerning them, and will make his own remarks. For my own part, I did consider at the time, and do still consider, the inflammation of Miss E. Colborne's arm, as a *troublesome and disagreeable*, but not as an *alarming* and *dreadful* circumstance.

I remain, very respectfully,

Dear Sir,

Your humble servant,

Stroud, 9th May, 1799. T. HUGHES."

P. S. In the above narrative it is noticed, that Miss Colborne was thought to be a little heavy on the 8th day from the first inoculation with cow-pox matter, and that she and Miss S. Colborne, who did not take the infection of the cow-pox, as well as Miss E. Colborne, who did, had an eruption of pimples on that day, which disappeared on the next. Nothing but the most scrupulous regard to mention every circumstance that occurred during the process of inoculation, could have induced me to insert these; for the heaviness, if any, in Miss Colborne, was very slight, and the pimples in all were so minute, and so transient, that without a different state of the inoculated part, they could not have been considered by any practitioner as signs of infection having taken place, and I am persuaded would, at any other time, have passed unobserved."

In the Gloucester Journal for May 13th, we observed a letter on the cow-pox, signed C. COOKE, in which the following passages occur, viz.

" Permit me to remark, that I not only *very much doubt cow-pox being a permanent preventive from small-pox*, but I am *confirmed* in this opinion by *occurrences* in my own practice, by conversing with many medical gentlemen upon the subject, and by an additional account received from Dr. BEDDOES, who writes (alluding to a publication edited by him), '*I have added a case, where small-pox was taken after cow-pox had been twice gone through.*' Great advantage however may arise in practice from the present

* Medical Communications, &c. by Dr. BEDDOES, p. 201.

present investigation; because, knowing that cow-pox has a *temporary influence* upon small-pox, we can suppress the progress of it by immediately inoculating cow-pox; and could we ascertain the time to which the influence of inoculated cow-pox extends itself, we might always lessen the hazard of small-pox recurring, by repeating the inoculation of cow-pox when necessary.

"I will only add, that a spurious kind of cow-pox sometimes occurs, and is an objection to the new mode of inoculation; but I *most heartily wish* every advantage and satisfaction may be derived from a full investigation of this subject; and remain your obliged servant, &c."

Gloucester, May 9th, 1799.

We shall be much obliged to the writer of the letter, or any other Gentleman, for an account of any occurrences which tend to confirm his opinion, as we have never been able to find one unequivocal case of small-pox following the true cow-pox, though we know many instances where all probable means were used to infect the patients with small-pox, and this at very different intervals after their having undergone the cow-pox.

Reports of a Series of Inoculations for the Variolæ Vaccinæ, or Cow-pox; with Remarks and Observations on the Disease, considered as a Substitute for the Small-pox:—By WILLIAM WOODVILLE, M. D. Physician to the Small-Pox and Inoculation Hospitals, 8vo. 156. p. *London*, Phillips and Son.

DR. WOODVILLE introduces his work with an account of Dr. JENNER's first publication, and the impression it made upon him. In consequence of experiments made with the matter of grease at the Veterinary College, Mr. SIMMONS's Experiments, and Dr. PEARSON's Inquiry, p. 83, 84, &c. Dr. Woodville concludes, that the vaccine disease is not derived from the horse.

"But though Dr. Jenner seems to have been misled with respect to the origin of the cow-pox, still his facts and observations concerning its effects upon mankind, are not less valid and important; nor did I feel the less desirous to try how far they would be invalidated or confirmed by a more enlarged experience than he had the opportunity of acquiring.

At p. 12 is given an account of the case of Sarah Rice, a milker, of which a representation is attempted in the plate designed for our first Number.

ber. Dr. Woodville then proceeds: " Before relating the cafes of inoculation with the matter of cow-pox, I have judged it proper in the firft place briefly to ftate what are the local effects produced by inoculating variolous matter, fo that the progrefs of the infection in both cafes may be compared, and the fubject of inoculation at large, be better underftood.

" In cafes wherein inoculation of the fmall-pox proves effectual, a fmall particle of variolous matter being applied by a fuperficial puncture of the fkin, ufually produces in the courfe of three or four days, or fooner, a little elevation of the punctured part, difcoverable by the touch, and a red fpeck diftinguifhable by the eye. From this time the rednefs advances in a circular form, more or lefs rapidly, according to the conftitutional circumftances of the patient; and the firft effect of this fuperficial inflammation is the formation of a veficle upon its centre, which ufually appears between the 4th and 7th day after the inoculation. The extent of this veficle is generally found to bear fome proportion to the intenfity of the inflammation; and contains a limpid fluid, by the abforption of which the fmall-pox is produced. The veficle foon burfts, and the central part of the puncture becomes depreffed, and often of a dark hue, which appearances, together with the marginal inflammation, continue to increafe, till the eruptive fymptoms fubfide, when the edges of the depreffed part begin to fwell with a purulent fluid, and the inflammation gradually recedes.

" Thus it appears that the variolous matter, firft inferted by the puncture, like that of other morbid poifons, is not capable of being immediately abforbed, but lodges in the fkin, and there excites an inflammatory procefs, by which a new matter, producing the difeafe, is generated.* It would feem alfo, that this procefs is carried to a greater or lefs extent in different perfons before the matter enters the abforbents, owing probably to the greater or lefs aptitude in thefe veffels to receive it. Hence we find the local inflammation in fome cafes confiderably advanced, before the fyftem becomes affected; while in others the eruptive fymptoms fupervene, when it appears to have made but very little progrefs; and therefore, though the eighth day after the inoculation proves the ufual period at which the patient feels indifpofed, yet this frequently happens much fooner or later, and the progrefs of the cow-pox infection will be found to take the fame latitude.

" Monday, January 21, 1799, I took the matter of cow-pox, in a purulent ftate, from the teats of a cow, with which I immediately inoculated feven

* " In the fecond Volume of the 'Hiftory of Inoculation,' (now nearly ready for the prefs) I have endeavoured to fhew that the general greater mildnefs of the inoculated than the cafual fmall-pox, depends upon this circumftance."

ſeven perſons by a ſingle puncture in the arm of each, or rather by ſcratching the ſkin with the point of the lancet, till the inſtrument became tinged with blood."

Dr. Woodville then commences his detail of the caſes which he inoculated between the 21ſt of January, 1799, and the 18th of March following, amounting to *two hundred.*

Nearly the whole of theſe perſons were ſubſequently inoculated with variolous matter, and many of them expoſed to perſons labouring under this diſeaſe, without a ſingle inſtance of the ſmall-pox being produced, after the vaccine infection had taken effect. The *forty-ninth* caſe is that of Mr. Walker's child, given in our ſecond Number.

For the uſual courſe of the cow-pox we refer our readers to the work itſelf, and the account we have given in our preceding Numbers.—At p. 115 Dr. Woodville gives a tabular ſtatement of the progreſſive deſcent of the cow-pox infection from patient to patient, as well as the magnitude of the diſeaſe which was excited by the inoculation. From the table, which extends much beyond the detail of caſes, we collect the following *Facts:*

1. That out of about 500 caſes of the inoculated cow-pox, one proved fatal; and that in ſome others, the diſeaſe, from the number of puſtules, was of formidable ſeverity; while, on the other hand, a very large proportion of the patients were ſcarcely diſordered from the inoculation, and had no puſtules, p. 149.

2. That the matter of the vaccine diſeaſe has generally produced much fewer puſtules and leſs indiſpoſition than that of the ſmall-pox, p. 150.

3. That about two-fifths of all the perſons inoculated for the variolæ vaccinæ had no puſtules; and that in not more than a fourth part of them was there experienced any perceptible diſorder of the conſtitution. *Ibid.*

"But it muſt be acknowledged," continues Dr. Woodville, "that in ſeveral inſtances the cow-pox has proved a very ſevere diſeaſe. In three or four caſes, out of 500, the patient has been in conſiderable danger, and one child, as I have already obſerved, actually died under the effects of the diſeaſe. Now, if it be admitted, that at an average, one of 500 will die of the inoculated cow-pox, I confeſs I ſhould not be diſpoſed to introduce this diſeaſe into the Inoculation Hoſpital, becauſe out of the laſt 5000 caſes of variolous inoculation, the number of deaths has not exceeded the proportion of one in 600. But I am inclined to think, that if the matter of the cow-pox uſed for the purpoſe of inoculation were only taken from thoſe in whom the diſeaſe appeared in a very mild form, the reſult would

be

be more favourable than in the statement here given. For though it has occasionally happened that the matter taken from the arm of a patient, in whom the disorder neither produced fever nor eruption, has in others produced both; yet still it has much more commonly had the effect of exciting a milder disease than the matter of the pustules, or than that which was obtained from a patient who had the disease in a severe manner, as may be seen by an examination of the table.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I SHALL feel obliged to you to insert, in your next number, the following observations on MAYOW'S DISCOVERIES, in answer to *Dr. Lubbock,* on the same subject.

I am fully convinced that the writings of Mayow spread with considerable rapidity throughout Europe, as can be easily proved from Morhof and others. Notwithstanding, however, this diffusion of his doctrines, they do not appear to have been generally received in the full and strict sense in which Mayo wished them to be understood: almost all the writers who mention his doctrine, confounded his fire-air particles with the particles of nitre. From this circumstance it is, as I have said in the introduction, "that many by not understanding him, rejected his opinions, and others attributed to him doctrines which he never held." Among these we may particularly mention Schelhamerus, who exclaims with a degree of sarcastic envy, *Quæ sententia,* (the absorption of nitrous particles by the lungs) *ut est novitatum amans hoc seculum,* statim ab omnibus vel tantum non omnibus Anglis, Batavis, Gallis, Germanis, avide arrepta est. De nitro, p. 100. This subject is fully explained in observations on modern discoveries, p. 240. Two of the authors also quoted by Dr. Lubbock, viz. Dr. Connor and Mr. Tabor, have made no discrimination between particles of nitre, and fire-air particles; the others may have likewise fallen into the same error, but this I cannot assert, not having seen their works, and the passages are not detailed.

Although I do not believe that Mayow's doctrines were favourably received immediately upon their publication, yet I am far from asserting, with Dr. Beddoes, that his name was never echoed by popular applause; and, at the end of the 14th Sect. of my work, I have said, that I was happy, from the investigation gone through, in being able to contradict this too hasty conclusion; for his opinions had been adopted and commented upon

upon by Wolferstan, Baglivi, Morhof, Collins, Verhayen, Hales, Drake, and Haller, and it affords me sensible satisfaction, to add the names mentioned by Dr. Lubbock.

During Mayow's life, however, not much notice seems to have been taken of his writings. In no work which I have consulted, published during his life, do I find his name mentioned, or a distant hint of his doctrine: and what appears to me surprising is, that in a thesis which Thruston read for his degree at Cambridge, in 1664, but which was not published for several years after, he makes no mention of Mayow, notwithstanding he entertains ideas very similar to Mayow's concerning respiration. Thruston's opinion, too, had been freely canvassed by some, as he himself tells us, "quod theoriæ meæ, a nonnullis publicè sed suppresso meo nomine, impugnatæ." Lower's 'Tractatus de Corde' was published during Mayow's life, and the fourth edition, twelve years after Mayow had given to the world his 'Experiments and Observations on Respiration;' yet not a word concerning Mayow is to be found, notwithstanding Lower was one of the first who observed the change of colour which the blood acquires in the lungs, and which was so beautifully illustrated and confirmed by the ingenious experiments of Mayow, vide pp. 105 and 124 of 'Observations on Modern Discoveries.' The Reviewer in the 'Phil. Transact.' did not once smile upon his labours; Jocker, in his 'Lexicon,' asserts he was not noticed during his life; and Wood, in his 'Athenæ Oxon.' gives but a very scanty and superficial account of him, which would not have been the case, I think, had his works been earlier attended to. He died in 1679, and I do not find his name mentioned till the following year, twelve years after the publication of his Treatise on Respiration; a short period, it will be said, but from which we may, nevertheless, in some degree, infer a neglect of his opinions.

The philosophy of Mayow was published in an age remarkable for its production of great literary characters. Cotemporary with him were Boyle, Newton, Lower, Willis, and innumerable others, whose labours have considerably improved the sciences: Harvey had but lately discovered the circulation; the philosophic world was engaged in examining the Newtonian and Cartesian doctrines; and the theory of Stahl was just adopted by chemists, and was in the full career of its glory. Germany was now famous, all over Europe, for its production of able chemists; and men were much attached to the chemical labours of that country, which had given birth to Becker, to Van Helmont, and to Stahl. It was impossible for a man who died at the early age of thirty-two, however true his theory, or just his system, to oppose with success such accumulated obstacles. No champion would be found hardy enough to stem the tide of popular opinion, with theories and experiments not his own; and it is not likely, that many

many would risk their literary reputation in defence of doctrines, which appeared to meet with general disapprobation. Thus it was that the opinions of Mayow did not attract notice till many years after his death, when his works were read and admired by some of the first philosophers of the age. His opinions, however, were not generally understood, so as to form a system; the public mind was not ripe for improvement, and thus it was that his theories were lost in the great mass of discordant doctrines.

I have certainly said, that Munday does not mention Mayow. The edition I used may be different from Dr. Lubbock's; at any rate, in addition to my want of leisure at the time, I found so much jargon, that it was with difficulty I got through as much as I did. I have been informed that there is a family now living in Cornwall of the same name with Mayow; and, according to Wood, he was descended from a family living at Bree, in the same county.

I shall always hold in veneration the extraordinary abilities of this great genius, the Newton (as Dr. Lubbock very deservedly styles him) of chemical science; and I feel happy in being able here to repeat, from further testimonies, what I have elsewhere observed, that "the name of this great man is now restored to the annals of science; his genius is acknowledged, his abilities admired, and his opinions confirmed. The unequivocal concurrence of respectable testimonies has added lustre to his literary fame; and may the laurel of merited reputation continually flourish, unfaded, which the fatigues of discovery have wreathed about his brow!"

I am, GENTLEMEN,

Your's &c.

Bedford, May 10, 1799. G. D. YEATS.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I Have taken the liberty of enclosing a case which came under my care a few months ago, in which the trephine was used to great advantage.

It was a detachment of the dura mater from the cranium with extravasation, occasioned by a fall.

If you think it worthy of a place in your monthly publication, the insertion of it will much oblige,

GENTLEMEN,

Your very humble Servant,

THOMAS CAM, Jun.

Surgeon to the Infirmary at Hereford.

Hereford, April 21st, 1799.

I was

I was sent for to a boy of about twelve years of age, upon the fourth of June last, who, as he was leading a colt to the blacksmith's, met in the road a one-horse chaise, which it startled at, and immediately set off; the boy having the halter twisted several times round his arm, was thrown down with great violence, and dragged a considerable distance before he was disengaged. In an hour after the accident I saw the lad, whom I found apparently in a dying state; he was extremely cold and languid, his pulse hardly perceptible, and his respiration much oppressed: I with much difficulty opened his mouth, and poured down some wine, which after being repeated four or five times, seemed to revive him; and when he was a little recovered from his excessive languor, I began to examine the injured parts. The first thing that presented itself was a small wound above the os frontis, with a mere detachment of the scalp from the pericranium two inches in length, but no fracture or depression; the right clavicle was broken, and his back, arms, and legs, very much bruised. His head having suffered materially from the concussion, I opened the temporal artery, but as the quantity of blood taken away, I judged not sufficient, I bled him in the arm. After this treatment he breathed with more ease, and I left him much better than I could possibly have expected. In the evening I saw him again, and as he was much heated, with a full pulse, and great restlessness, I took more blood from him. The next day he was quite as restless, but his heat had nearly left him; some aperient medicines were given, and with the assistance of glysters, evacuatious were procured. On the third day he was with difficulty kept in bed, and could not be prevailed on to take the least nourishment. On the fourth day, finding him not relieved, I removed the whole of the detached scalp, which appeared a little discoloured, but no discovery of the nature of the injury could be made. On the fifth day, not being any better, his pulse irregular, and his fæces and urine passing involuntarily, I applied the trephine. When the cranium was elevated, a sanious fluid was discharged, the dura mater was separated from it, and the vessels turgid. On the next day after the operation, which was the sixth, he remained just in the same state, and very delirious. When the dressings were removed, a considerable quantity of the same kind of fluid had made its escape, and all the former symptoms continued. On the eighth day there was very little discharge, the cerebrum entirely filled up the opening in the cranium. Upon pressing the dura mater with my finger, more of the sanious fluid rushed from the lower part of the frontal bone. On the ninth day observing no amendment, I used the trephine again, to make a more depending outlet for the discharge; the dura mater was covered with a dark slough, and as the disease extended fur-

ther, I repeated the operation in two more places, to put me in poſſeſſion of all the injured parts. On the tenth and eleventh days he was not much improved in his health, but upon the twelfth, he became more calm, evidently ſhewed ſigns of returning reaſon, took his food, and was compoſed. On the thirteenth, full as well as the day before. On the fourteenth day, ſtill improving, and upon the fifteenth the parts were covered with a well digeſted pus. On the ſixteenth and ſeventeenth days the ſore put on a very healthy appearance, and he took the cortex with apparent advantage. On the twenty-firſt day he was brought to Hereford for the convenience of attendance, a diſtance of four miles. At the end of two months, he returned into the country, and walked backward and forward to be dreſſed, the wound was then contracted to a very ſmall ſize, but prevented from quite healing, by ſome trifling exfoliation. The boy is perfectly recovered, and though weakly before the accident, now enjoys a good ſhare of health.

To the Editors of the Medical and Phyſical Journal.

Gentlemen,

I am deſired by the Committee of the Lyceum Medicum Londinenſe, to ſend you the encloſed, being the Prize Queſtion of that ſociety for the enſuing year, and to requeſt you will have the goodneſs to inſert it in your next Number.

I am, Gentlemen,

Your humble Servant,

Thurſday, May 23, 1799. John Crake, Regiſter.

PRIZE QUESTION.

An acid precipitates a ſubſtance from the bile ſimilar to the reſinous ſubſtances of plants, which is inſoluble in water:—why does this precipitation take place? The ſame ſubſtance is often ſeparated in the gall-bladder and duct, forming concretions:—how is this precipitation produced? and is there any method by which it may be prevented, or by which it, when precipitated, may be re-diſſolved?

T2

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

NOTWITHSTANDING the great improvements which have been made in the art of medicine, within the present century, there is one branch of it, which has, till of late, been but little attended to—I refer to the treatment of incurable and mortal diseases: this is doubtless a subject of considerable importance: I shall therefore, without further apology, make a few observations on the treatment of a disease, which comes most unequivocally under the above description: I mean *aneurism of the aorta*, or of its more immediate branches. In cases of this kind, the practitioner has in general thought himself fully justified in leaving the patient quietly to his fate; but I was once witness to a case of aneurism of the right subclavian artery, in which the *digitalis* was from time to time exhibited in small doses, and I think the patient's life was obviously protracted by this mode of treatment. The well-known property which this drug possesses of lessening the force of the circulation, it may readily be supposed was the circumstance which induced the practitioner to make use of it on this occasion. Whether or not the practice is singular, I am unable to determine; but I think it is certainly worthy of imitation.

It unfortunately happens, that the case of aneurism of the aorta, or its more immediate branches, cannot always be ascertained during an early stage of the disease; where it can, however, I think the exhibition of the *digitalis*, together with an attention to avoid all causes which might hurry the circulation, would go near to check the progress of the tumor altogether, or at least render its growth very slow, and lengthen the life of the patient.

Should you think these hints worthy of being made public, they are very much at your service.

London, May 10, 1799. R. B. M.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I Herewith send you the morbid appearances of a subject I opened last week: the particulars of his illness I am not acquainted with; I was informed by the physician who attended him, that he had laboured two years under spasmodic asthma, with a constant throbbing of the heart. Last Thursday, while walking out of his house in Cavendish-square, to get in his carriage, he dropped down, and expired immediately.

Appearances

Appearances on Dissection.

In the right ventricle of the heart, there was a mass of coagulable lymph, which extended into the neighbouring large vessels, very firm, and of a light yellow colour; it did not fill up the cavity completely. The apex of the left ventricle was dilated into a pouch, about the size of a large walnut. There was an aneurism at the arch of the aorta; the latter was enlarged beyond its usual size. The three semilunares were thickened and opaque. The coats of the pulmonary artery were elongated, and of a light reddish colour. The valvulæ mitrales were nearly obliterated. The lungs were full of tubercles, mostly in a state of suppuration. The liver was enlarged, and there were two calculi, very small, in the *ductus hepaticus*. The other viscera were perfectly sound.

Your obliged,

CHARLES BROWN.

Hatton Garden,
May 10, 1799.

P. S. I am under the necessity of deferring my paper on the antivenereal virtues of the *hydrargyrum phosphoratum*, and my experiments with the *yellow oxyd of tungsten*, till I have leisure to complete both.

Account of the Use of an Instrument for cutting the Cornea, in the Operation of extracting a Cataract.

By A. Carlisle, *Surgeon to the Westminster Hospital.*

A Few years ago, it fell in my way to see an instrument which had been used with success at Paris, and in other parts of the Continent of Europe, for making the incision of the cornea, in the operation of extraction. The great difficulty of finding the globe of the eye, and the consequent tediousness, as well as incertitude of performing the incision, induced me to try the instrument to be described.

Having previously decided in my own judgment, that depression is a less efficacious operation than extraction, provided the latter be performed with due attention and dexterity, and having found that nearly the whole of the success turned upon the incision of the cornea, the following case presently occurred:—A blind woman, having had one eye spoiled by an attempt at depression, and the other useless from a complete cataract, was pitched upon for the operation. The subject was a very indifferent one, being old, and afflicted with chronic inflammation of the eye-lids. The globe of the eye, however, during the operation, was tranquil; the incision was made satisfactorily, and without

any

any other assistance, the opaque crystalline lens jumped out. An undue degree of pressure occasioned the flow of a small quantity of the vitreous humour, nevertheless the patient recovered her perfect sight. Mr. Lynn, senior surgeon of the Westminster Hospital, has also employed the same instrument with perfect success as to the incision; but as the cases are both now under treatment, the result cannot be ascertained.

The form and particular mechanism of this instrument is not easily described in words; and an expensive plate would only gratify curiosity, without enabling the instrument-maker to form one with that accuracy which this nice operation requires. Mr. Stodart, an eminent surgeon's instrument maker, in the Strand, has paid particular attention to this instrument, has seen it used, and made himself acquainted with all its needful qualifications; he has it for sale. It consists of a plate of brass, with a loop, or ring, of the size of the transparent cornea, fixed at a right angle with one end of the plate. The eye-lids being held open, the cornea is made to project through this ring, so as to expose nearly the whole of its transparent part beyond its inner edge. A cutting blade of steel is made to slide close against the inner surface of this brass loop, which is acted upon by a strong steel spring. When cocked, the blade is carried beyond the right edge of the ring; and when let off by a trigger, it passes through the lower half of the cornea, cutting a flap of a semicircular form at its lower edge. The other part of the operation is then to be conducted as usual. An adjustable screw alters the distance of the cutting blade from the ring through which the cornea protrudes, so as in some measure to adapt the instrument to eyes of different diameters. The ring itself is also made removeable, so that one of the size required may be chosen.

If there is any objection to this mode of dividing the cornea, it rests with the circumstance of the sudden collapse of the globe of the eye, endangering the protrusion of the vitreous humour, before the muscles of the globe are sufficiently aware of the resistance taken from that body, or before they recover from the shock which this incision communicates to the whole organ. Still, however, taking into consideration the difficulty, and even sometimes total impossibility of making a good incision with the hand, I should conceive that the use of this instrument may be attended with beneficial consequences in this country.

STATE

STATE OF DISEASES IN LONDON.

Account of Diseases in an Eastern District of London, from the 20th of April to the 20th of May.

ACUTE DISEASES.

	No. of Cases.
Typhus Mitior	3
Peripneumonia Notha	4
Catarrh	7
Ophthalmia	5
Acute Rheumatism	7

CHRONIC DISEASES.

Dyspnœa	10
Cough	12
Cough and Dyspnœa	14
Phthisis Pulmonalis	6
Hæmoptoe	4
Ascites	3
Anasarca	4
Hydrothorax	2
Hepatitis Chronica	3
Cephalalgia	10
Vertigo	2
Hemicrania	3
Ophthalmia	4
Epistaxis	2
Amennorrhœa	5
Menorrhagia difficilis	3
Chlorosis	4
Enterodynia	3
Diarrhœa	5

	No. of Cases.
Vomitus	2
Dyspepsia	7
Gastrodynia	6
Hæmorrhois	2
Dysuria	4
Herpes	3
Tinea	2
Psora	1
Jaundice	2
Hysteria	4
Hypochondriasis	5
Palpitation of the Heart	1
Gout	1
Chronic Rheumatism	12

PUERPERAL DISEASES.

Ephemera	3
Menorrhagia lochialis	3
Mastrodynia	5
Rhagas Papillæ	3

INFANTILE DISEASES.

Aphthæ	2
Herpetic Eruptions	3
Tinea	4
Tabes Mesenterica	2
Ophthalmia	2
Hooping Cough	5

Although we have advanced beyond the period in which winterly diseases generally prevail, the weather still continuing very cold, we have had a large number of cases of catarrh, dyspnœa, cough, and rheumatism.

The instances of ophthalmia, which have lately occurred, have been uncommonly numerous. This may probably be attributed to the long continuance of east and north-east winds. This disease has been distinguished by nosologists, according to the part of the eye which has been the seat of it, or according to the remote causes by which it has been produced. It has sometimes its seat in the membranes of the eye, when it has been denominated ophthalmia membranarum; when it has appeared chiefly on the edges of the eye-lids, it has been termed ophthalmia tarsi.

These two kinds are, however, very frequently connected. This disease often appears in connection with scrophula or syphilis, in which case it is very liable to occur on every slight occasion.

It has lately been produced in several instances by exposure to a cold air, after which has been observed a fulness of the vessels of the tunica con-

conjunctiva, accompanied with considerable pain, an effusion of tears, and intolerance of light. There is generally a discharge of an acrimonious fluid, which during the night closes the eyes, and renders some emollient application necessary for the more easy separation of the eye-lids.

This disease, though the symptoms at the first appearance may be very similar, admits of a great variety of treatment, depending on the general state of the constitution, the original cause, and varying circumstances of the case. These have been so accurately distinguished, and so judicious a mode of treatment has been recommended by Mr. Ware, in his different writings on the subject, that we cannot do better than direct the attention of the practitioner to this source of information.

Diseases admitted as in and out-Patients of the Physicians of the Westminster Hospital, between the 20th of April and the 20th of May.

	No. of Cases.
Typhus	11
Tertian	1
Quotidian	1
Scarlatina	1
Amenorrhœa	1
Ascites	1
Asthenia	5
Asthma	2
Catarrh	1
Colic	1
Convulsions	1
Cough	9
Diarrhœa	4
Dyspepsia	4
Enterodynia	2
Epistaxis	1
Erysipelas	1
Hooping Cough	1
Hæmoptoe	2
Hysteria	2
Itch	4
Lichen	1
Lumbago	1
Leucorrhœa	2
Menorrhagia	1
Phthisis	3
Pleurisy	1
Rheumatism	14
Struma	3
Tinea	2
Urticaria	2

List of Diseases from the 20th of April to the 20th of May; being the Result of the Public and Private Practice of a Physician at the West End of the Town.

FEBRILE DISEASES.

	No. of Cases.
Catarrh	13
Acute Rheumatism	5
Hooping-Cough	6
Measles	5
Scarlatina	4
Chicken-Pox	1
Contagious malignant Fever	3
Slow Fever, and Hectic	9
Child-bed-fever	3
Febrile Diseases of Infants	9
Aphthous Sore-throat	3
Hæmoptoe	1
Hæmatemesis	1
Quotidian	1
Tertian	1

CHRONIC DISEASES.	No. of Caſes.		No. of Caſes.
Cough and Dyſpnœa	36	Chloroſis, &c.	7
Pulmonary Conſumption	7	Menorrhagia	5
Pleurodyne	4	Abortion	2
Chronic Rheumatiſm	15	Fluor albus	2
Aſthenia	21	Dyſury and Gravel	3
Dropſy	7	Hæmorrhoids	2
Scrophula	5	Tabes Meſenterica	6
Rachitis	2	Scirrhus	4
Cephalæa	8	Tooth raſh, &c.	6
Epilepſy	1	Itch and Prurigo	15
Vertigo	2	Lepra, and Scaly Tetter	5
Dyſpepſia	10	Intertrigo	2
Pains of the Stomach and Bowels	14	Acne	5
Diarrhœa	6	Nettle-raſh	1
Conſtipation	2	Purpura	2
		Erythema	1
		Porrigo	8

The following Liſt of Deaths is given by the Bills of Mortality, for the laſt three Months.

Abſceſs	5	Jaundice	21
Abortive	10	Inflammation	194
Aged	439	Liver-grown	4
Apoplexy	32	Lunatic	32
Aſthma	295	Meaſles	24
Bleeding	1	Miſcarriage	1
Brain Fever	1	Mortification	43
Cancer	13	Palſy	19
Child-bed	46	Pleuriſy	8
Conſumption	1353	Rupture	3
Convulſions	1033	Small-Pox	410
Croup	4	Still-born	161
Dropſy	220	Stone	1
Fever	510	Suddenly	42
Gout	25	Teeth	108
Gravel	2	Thruſh	6
Hooping-Cough	190	Water in the Head	15

According to this ſtatement, if we could rely upon its accuracy, the total number of deaths in London, during the three ſpring months, amounted to 5271. Among theſe, no leſs than 1353, or upwards of one fourth part, died of conſumption!—Suppoſing the population of the country to conſiſt of ten millions of inhabitants, the thirtieth part of whom, in the order of things, die annually, it would follow, that this exterminating diſeaſe cuts off more than 80,000 perſons every year, in Great Britain alone; and theſe generally in the prime of life, when the community ought to be benefited by their mental and bodily exertions.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I Hope the inclosed observations, on the subject of quackery, will not be considered as improper for insertion in the next Number of your valuable and truly interesting Medical Journal.

I am, GENTLEMEN,

With respect, yours, &c.

April 24th, 1799. ALIQUIS.

On Quackery, and the most effectual Means of checking its dangerous Progress.

IT is not an easy matter to determine, what mode of administering medicine comes within the description of quackery; it can hardly be extended to all advertised remedies, because in that case, we must involve many prescriptions of eminent and regular physicians, who, actuated by various motives, have communicated their discoveries to mankind in this way; or the fruits of whose labours in the invention and application of new medicines, have found their way into the world by accidental means, without their concurrence.

There are also some medicines which have been reported to be so highly efficacious in the cure of particular disorders, that the legislature have thought fit to pay the inventors a reward for their ingenuity, and to publish the compositions of their nostrums for the benefit of mankind.

But we do not apprehend that either of those classes come properly under the denomination of quackery. Where the component parts of a medicine are publicly known, as well as the exact manner of preparing it, or where it comes forth sanctioned by the name of a regular physician, of known and approved abilities and integrity, however it is promulgated, or in whatever way the diseased are supplied with it, we do not apprehend, in either case, the medicine ought to be considered as quackery, or that its value is at all lessened by being vended at such a price as renders it attainable by the afflicted in every station of life, or degree of circumstances.*

But

* Although we can by no means subscribe to the limited definition of quackery given by our correspondent, nor can it be disputed, that Nostrums in general, whether encouraged by the legislature, or puffed into notice under the sanction of a *quondam* eminent physician,

But in my opinion, thoſe are properly termed quack medicines, which are either advertiſed under fictitious names, or anonymouſly; thoſe of which the compoſition is unknown, and the compounders and venders of which, are either ignorant pretenders to medical knowledge, or men in ſituations or profeſſions in life totally remote from the profeſſion of phyſic.

Under the burden of medicines thus obtruded on the world, do the public at this moment groan; and not only the newſpapers and other periodical publications are filled with advertiſements, recommending theſe doubtful and dreadful compounds, but every corner of the ſtreet is furniſhed with diſtributors, who load the paſſengers with pamphlets and hand-bills, promiſing, in the ſtrongeſt terms of aſſertion, infallible relief to the diſeaſed in all caſes; and inviting them to ſwallow, for the cure of diſorders ſo very different in their natures, as to make it obvious, on a moment's reflection, to all but the groſsly ignorant, to whom, indeed, theſe deluſive applications are particularly directed. Such is the credulity of mankind, that they ſuffer themſelves to be duped by ſuch barefaced artifices, and depending on a catalogue of pretended cures (into the truth of which they never give themſelves the trouble to enquire), they add to the number of the deceived, and, without regard to habit, conſtitution, age, or ſex, doſe themſelves with pills, potions, and powders, merely on the credit of their fabricated atteſtations; and at the expence of their health, and danger of their lives, miniſter to the fraud and avarice of thoſe retailers of poiſon; the profits of ſome of whom are ſo extravagant, as to ſupport them in enormous magnificent town-houſes and country villas, ſplendid equipages, trains of ſervants, and all the appendages of rank and fortune: though ſome of theſe ſelf-created doctors are ſelected from the loweſt of the people; and we are well aſſured, that one in particular now flouriſhes in this metropolis, and ſits at eaſe in his own carriage, who a very few years ago was employed in the ſtable, and driving one of thoſe coaches which ply in the ſtreets for the convenience of the public.

But theſe peſts to ſociety are not content with publiſhing their miſerable inſertions in the newſpapers, &c. but volumes are daily obtruded on the public, which many of the nominal authors are unable to read; by theſe means they perſuade the deluded multitude that the moſt dangerous diſeaſes are removed, and the moſt deſperate caſes cured, by theſe balſams of life and health, each of which, according to the pompous accounts of thoſe

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phyſician, are any thing ſhort of a "burleſque on the common ſenſe of mankind," yet, as the anonymous author of this paper has ſuggeſted ſome uſeful hints for the ſuppreſſion of quack medicines; and as this is a ſubject ſo intimately connected with the advancement of the ſcience, and the ſafety of the individual, we could not, conſiſtently with our profeſſions, refuſe this ingenious letter a place in our Journal. W.

thoſe hireling eulogiſts, poſſeſſes all the power of the whole of the materia medica, and is alone ſufficient to prolong life to a period of years beyond that which has been allotted to the race of man; and we are ſorry to add, that ſhops of reputation are to be found, baſe enough to participate in theſe practices of infamy, and to ſhare in the price of their fellow-creatures' deſtruction.—That evils of ſuch magnitude ſhould be ſuffered to paſs unnoticed, and that the lives of ſuch numbers of uſeful members of ſociety ſhould be thus ſuffered to be trifled with and ſported away, without the interpoſition of the legiſlature, in moſt other inſtances equally careful of property and life; that poiſon in a thouſand forms ſhould ſtill be permitted without check or controul, and that no benevolent member of the great councils of the nation ſhould turn his attention to an object of ſuch importance, is ſufficient to excite our wonder and aſtoniſhment; and ſtill more ſurpriſing is it, that the learned body, to whom the practice of phyſic is legally committed, and whoſe abilities are as extenſive as the powers with which they are inveſted, ſhould ſuffer ſuch enormities to proceed. By their intervention, either by an application to parliament to ſtop the progreſs of ſuch alarming practices, or by expoſing the compoſitions and effects of the ſeveral quack medicines offered to the public, detecting the falſity of the pretended cures performed by them, and exhibiting catalogues of the injuries ſuſtained by thoſe numerous individuals, whoſe lives have been deſtroyed or rendered comfortleſs by this unwarrantable traffic, the evil might be remedied.—Surely, the univerſal ſilence of the faculty on theſe concerns, ſeems to countenance an inſinuation which we are well perſuaded is unjuſt, "That the regular profeſſors of phyſic are intereſted in the diſſemination of theſe ſpurious noſtrums, the ſuppreſſion of which would leſſen the progreſs of diſeaſe, and of courſe diminiſh the number of patients who are ultimately compelled to ſeek relief from them, for the diſorders brought on by quacks, mountebanks, empirics, &c.

If we might venture to offer a few hints on a ſubject apparently of ſo much conſequence, we would ſubmit to the legiſlature the propriety of erecting a public board, compoſed of the moſt eminent phyſicians, for the examination, analyzation, and approbation, of every new medicine, before an advertiſement ſhould be admitted into any newſpaper or other periodical publication, and before it ſhould be vended in any manner whatever.

To this board thoſe who had made any medical improvement ſhould apply, and ſtate, on oath, the ingredients and compoſition of the propoſed medicine, and the diſorders to which it is meant to be applied; and if the members of the board ſhould think it may probably produce the propoſed effects, they ſhould immediately underwrite ſuch opinion on the adver-

tiſements

tiſements intended to be publiſhed, and under that ſanction the medicine ſhould be publicly ſold.

That the ſame board ſhould carefully examine into the truth of all caſes and atteſtations of cures publiſhed in ſupport of any advertiſed medicine, and in caſe any of them ſhould be diſcovered to be fraudulently fabricated, to declare the ſame by public advertiſement, in order to prevent the continuance of the impoſition; and we may venture to aſſert, that the members of the College of Phyſicians would be happy to execute an office ſo eſſential to the public benefit, without the ſmalleſt view of private emolument.

But we are well aware, that the plan we have propoſed is extremely imperfect, and the execution of it in its preſent form would be attended with many difficulties. We can only plead in excuſe for offering it, our zeal, to remedy an increaſing evil, and our hope, that our humble attempt may induce ſome much abler writer to ſuggeſt a plan, better calculated to anſwer the important end for which it is deſigned.

Practical Remarks on the Diseases which occurred on board the Astrea, &c. By STEWART HENDERSON.

[*Concluded from our laſt Number*, pp. 236—238.]

EPIDEMIC CATARRH.

THIS catarrh, reſembling the influenza, which was ſo prevalent in England and other parts of Europe in 1782, made its appearance on board the Aſtrea the 5th of October, 1789, when at anchor off Kingſton: in the courſe of a few days there was hardly a man in the ſhip but was attacked in a greater or leſs degree; moſt of the ſquadron felt its influence, but it was obſerved to ſeize moſtly thoſe who had been longeſt on the ſtation. The Centurion and Blonde, ſhips newly arrived from England, had hardly any taken ill. The people of the town of Kingſton, eſpecially the lower claſs of whites and negroes, who ſleep in out-houſes, were generally affected. The appearance of the diſeaſe at different periods pervaded the whole iſland, ſometimes prevailing in one place a week before it was felt in another; as happened to the 10th regiment, ſtationed at Fort Auguſta, which is only four or five miles from where the ſquadron lay.

The ſymptoms varied in different perſons; in ſome they were complicated with the endemic remittent; in general they were ſeized ſuddenly with chillineſs and ſhivering, ſucceeded by a hot fit, langour and laſſitude; pain and ſtricture acroſs the thorax, with ſome difficulty of breathing;

ing; anxiety, ſickneſs, and violent pain in the head, particularly above the orbits; frequent ſneezing, the membrana ſchneideriana much affected; heat and ſoreneſs in the throat, with frequent cough. Some complained of a violent pain in the loins, which was much increaſed upon motion; one had a bleeding from the noſe; delirium appeared in ſome, but only in thoſe who had catarrhal ſymptoms, complicated with the remittent fever; the tongue white, and in ſome yellow; the pulſe quick and ſmall; the ſkin dry; the belly, in general, coſtive. Though the pain of the breaſt and ſide was ſometimes violent, yet the pulſe was ſeldom hard; no mark of inflammatory diatheſis ſo as to indicate bleeding; debility commenced with the diſeaſe and continued after the catarrhal ſymptoms were gone, requiring the uſe of bark and the moſt powerful cordials; relapſes were frequent, from being expoſed to the weather, but the ſymptoms were in a milder degree.

This diſeaſe appeared to me to be occaſioned by the ſudden tranſition of the weather. The preceding month had been uncommonly hot, ſuch as had never been felt by the oldeſt inhabitant in Kingſton: the thermometer in the day, being never below 90 in the ſhade. During this month, people were afraid to ſtir out; ſeveral from being expoſed to the intenſe rays of the ſun were ſeized with phrenzy, which in two inſtances, I was told, proved fatal. The ſea breezes were pretty regular: but we had not the uſual rains and ſqualls which diſtinguiſh this ſeaſon, and characterize what are called the hurricane months; partial ſhowers, indeed, fell in the mountains, but did not reach the vallies. In the firſt week of November the thermometer fell 10 degrees in the day, and experienced a much greater change in the night: the ſea breezes left us; the air became ſo foggy as to obſcure the ſolar rays; a great degree of dampneſs was felt, and in the night, a ſtrong land wind blew from the mountains, carrying with it a ſenſible degree of moiſture. Every one who was expoſed to this air was ſuddenly attacked with the diſeaſe. All thoſe men who ſlept upon deck without any covering, which many were induced to do from the great heat below, ſuffered from their imprudence; for they had the complaint in a more violent degree than the reſt who were afterwards ſeized.

I remarked, that the men who ſlept below in the cable-tier were the laſt ſeized, and had the complaint in a ſlighter degree; but the ſymptoms not being ſo violent, might be owing to the pre-diſpoſing cauſe being ſomewhat abated, on a change of the weather. For about the latter end of the month, the ſea breezes returned, with ſqualls, which ſoon diſperſed the ſurrounding vapours, and gave a briſk circulation to the ſtagnated air. With this change the diſeaſe diſappeared.

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The Centurion and Blonde not being affected, proved clearly that no contagion existed in the air. I imagine their exemption from it was owing to the constitutions of the men not having arrived at that degree of relaxation and irritability, which a continuance of some years in a hot climate never fails to produce, and renders the habit more susceptible of the sudden influence of cold, which appears to have been the sole cause of this epidemic catarrh.

In the beginning of the complaint, an emetic was generally given, which relieved the nausea and sickness, and produced some degree of perspiration. This was encouraged by keeping the patients in bed, and causing them to drink plentifully of warm sage-tea, barley-water, &c. From the number of the men confined below, as well as the nature of the epidemic, and state of the air, I thought it necessary to keep buckets of hot vinegar under their hammocks, to correct the stagnated air. Antimonials, with the tinct. opii, were administered; the vin. antimon. was what I in general used, thirty to forty drops four times a day, adding to each dose ten drops of the opium tincture; and by the assistance of the warm bath a plentiful perspiration was kept up. To relieve the cough, and promote expectoration, the sp. minder, with the oxymel scillit. were ordered. The tart. emetic, given so as not to produce full vomiting, afforded great relief to the febrile symptoms, by promoting perspiration, and removing the mucus accumulated in the bronchiæ. When the pain and stricture in the thorax were violent, blisters gave relief. Bark was given in those cases which partook of the remittent type; and, on account of the debility which commenced and continued with the disease, wine was often necessary. From the same cause, bleeding was never made use of on board the Astrea. Indeed, I found that the men from being so long exposed to the debilitating effects of a hot climate, bore evacuations very ill. These were the principal means we employed for the cure of this catarrh, and when unattended with pulmonary symptoms, it soon yielded to them. In those cases which terminated by expectoration, the debility was very great, requiring a nourishing diet, and plenty of good wine, which was never spared on these occasions.

ULCERS.

Of ulcers, and the nature of the ulcerative process, much has been said of late by eminent medical characters. It is only my intention here to take notice of that ulcer to which seamen and soldiers are more particularly subject, from the nature and manner of their life. Next to fever and dysentery, this complaint proves the most destructive to British seamen and soldiers, and no surgical disorder has deprived his Majesty's service of so many men, as every experienced surgeon must have observed, who

who has attended our hoſpitals during war; nor are there any caſes more unfit for general hoſpitals on their preſent principle.

When I acted as ſurgeon to his Majeſty's naval hoſpital at Antigua, in 1780, nearly one-third of the patients laboured under this complaint.—Being at that time a young ſurgeon, I was unwilling to run the riſk of deviating from eſtabliſhed authorities, and therefore purſued the plan pointed out by men of high repute in the profeſſion. Our method of treatment then conſiſted of poultices, various ointments, and other relaxing applications, with a ſparing uſe of tonics and ſtimulants; reſt and confinement were ſtrictly enjoined. I could uot help lamenting the inefficacy of thoſe remedies, when I ſaw ſo many fall victims to the diſeaſe, and others loſe their limbs, by being obliged to undergo a painful and hazardous operation. Baffled in every attempt to heal theſe ulcers, I was under the neceſſity of having recourſe to an operation, as the only chance of ſaving life.

Dr. Young, phyſician to the hoſpital, Mr. Weir, ſurgeon of the Alcmena, now phyſician to Lord St. Vincent's fleet, agreed with me in the neceſſity and propriety of performing the operation. We conſidered that it was only aſſiſting nature, for ſhe was endeavouring to get rid of a part which had become uſeleſs, and was contaminating the whole ſyſtem. I was further encouraged by the anxiety of the patients to have it done; and what gave me greater reaſon to expect ſucceſs, was, that in a row of empty rooms appropriated for officers, I had the liberty of putting the men before the operation, where they would breathe pure wholeſome air, which they had long been ſtrangers to in the hoſpital. Fourteen underwent the operation, moſt of them below the knee, which I always prefer when the caſe will admit of it. Such was the advantage of their being removed from the noxious air of a crowded ward, that in a few days all their hectic ſymptoms left them; appetite returned; the ſtumps put on a very healthy appearance, and continued to do ſo, until the ulcer of the ſtump was contracted to about the ſize of a half-crown, when it ſeemed to be ſtationary, diſcharging a thin ichor. Though their appetites were good, and notwithſtanding they had a nouriſhing diet, and good Madeira, and at the ſame time bark and other tonics, they did not appear to gain ſtrength. From their pale and languid countenances, I judged that moderate exerciſe in the open air, in the morning and evening, with the uſe of the cold bath, which happened to be convenient, might have a good effect in reſtoring their general health. I immediately procured crutches for them, and had them plunged into the ſalt water every morning. The good effect was ſoon viſible, not only in their countenances, but the ſore put on a fine,

florid,

florid, and healthy look, diſcharging good pus, and contracted daily. They all recovered, except one man, a landſman, who was a very irregular liver, and who, notwithſtanding that every precaution was taken to prevent it, procured and drank immoderately of new rum; part of a bottle of this poiſonous liquor being found in his bed when he died.

The bad effect of foul air on ulcers I had an opportunity of witneſſing at the Cape of Good Hope. A great number of the ſeamen and ſoldiers had ulcers, occaſioned by the immoderate uſe of ardent ſpirits, and their not uſing ſufficient vegetable aliment. The climate itſelf is remarked for its ſalubrity, and the Britiſh army for a conſiderable time paſt have been in a ſtate of health, unknown in any other part of the world. Storehouſes appropriated for the reception of the ſick, were then extremely crouded, and the air ſo vitiated, that the ſlighteſt caſe degenerated into the moſt malignant, in the courſe of a few days. Notwithſtanding every effort of very able ſurgeons, numbers died, and many loſt their limbs; none, I believe, recovered from the operation, until they thought of removing them to ſeparate apartments, which had the ſame good effects as at Antigua.

From what I have obſerved of the bad effect of crouding patients with ulcers, fever, or dyſentery, it appears, that the beſt and moſt powerful remedies will fail, when the parients are deprived of that great pabulum of life, pure atmoſpheric air, on which the preſervation and reſtoration of health ſo much depend. Three feet, the greateſt ſpace generally allowed between the beds, is not ſufficient, in wards containing acute infectious diſeaſes and ulcers; the fætor ariſing from one large ulcer will contaminate a whole ward, and render the air noxious to animal life.

On finding ſuch beneficial effects from exerciſe, pure air and cold bathing, in accelerating the healing of the ſtumps, I was glad to try what theſe combined would effect in the cure of the ulcers.

The ulcers to which ſeamen and ſoldiers are particulariy ſubject, are brought on, as I have before remarked, from their not uſing ſufficient vegetable aliment, joined to irregularities, eſpecially the abuſe of ſpirits, heat and moiſture, and expoſure to impure air. In a conſtitution previouſly prepared by ſuch debilitating powers, we can eaſily conceive, that the ſmalleſt ſcratch will degenerate into an ulcer, which, when below the knee, becomes very difficult of cure, often baffling every attempt of the heeling art. This ariſes from the ſtate of the fluids, and general debility, but particularly in the extreme parts, where thete is a greater deficiency of vital principle, even in health. Perhaps the tendinous ſtructure of the parts, and their depending ſituation, may aſſiſt in retarding the cure of ulcers ſituated upon the lower exrremities.

Appearance

Appearance of the Ulcer.

The ulcer generally makes its appearance on the fore or inner part of the leg, near the ancle, and discharges a thin acrimonious matter, excoriating the surrounding parts. On neglect or improper treatment, it enlarges daily; the discharge becoming more and more acrid, attended with a putrid fœtor; fungous excrescences begin to rise; the limb becomes œdematous, and very painful. Sometimes, on the least touch, or depending position, a hæmorrhage takes place; the bones become carious; putrid sloughs are cast off daily; and, from the constant irritation, the patient is kept in continual pain; has restless nights; and a hectic fever with colliquative sweats succeed. In this state, if the operation be not soon performed, a diarrhœa generally comes on, which in a few days closes the scene.

The progress of these symptoms will depend more or less on the constitution of the patient, the putrid diathesis in the system, exposure to miasmata, and in general to all the predisposing causes. In our expedition to St. Juan's, during the last war, such was the state of the air at that place, as I was informed by a surgeon in actual service there, that the slightest wound on the lower extremities degenerated into the worst symptoms I have described of this ulcer, in the course of three days, and carried off the patient in spite of the most powerful antiseptics.

Cure of the Ulcer.

In the cure of the ulcer, I have found that all relaxing and emollient applications are improper, unless when pain and inflammation require their use: when these symptoms are removed, they should be laid aside. The external applications, which in a great number of cases have succeeded with me, were warm and stimulant, increasing the action of the extreme vessels, and restoring the parts to their proper tone. With this view, I used the hydrargyr. nitrat. rubr. in powder, and sometimes in the form of ointment, or the solution of arg. nitrat. I often found it necessary to vary those escharotics; or leave them off when the discharge was copious, and apply dry lint, with slips of cerate to defend the edges; and over that a compress of linen, wet in a solution of sacchar. saturn. with the addition of a little camphorated spirit, supported by a roller of thin flannel or cotton, which was moistened in camphorated vinegar, renewed two or three times a day, and continued from the extremity of the foot to a little below the knee, not to prevent the motion of the joint, nor the action of the muscles. This enabled the patient to use moderate exercise, which I strictly ordered as soon as the pain and inflammation abated. This, with the daily use of the cold salt-water

bath. greatly accelerated the healing procefs, and affifted in reftoring the general health. When the difcharge was fœtid, lint dipped in tincture of myrrh, bark, or carrot poultices, corrected the fœtor, and lime-juice proved a good detergent.

While thefe external means were employed, internal remedies were at the fame time adminiftered, with two intentions; firft, to correct the putrid diathefis, and produce good juices; fecondly, to brace and ftrengthen the fyftem.

To anfwer the firft, the bark was given in copious dofes; lime-juice, and a large proportion of vegetable aliment, with plenty of good wine; while evacuations, which might leffen the vital principle, as well as debilitating caufes, were carefully avoided. The fecond was effected by preparations of fteel, affifted by exercife, and the cold-bath: but what I conceived to be the moft efficacious, was a very liberal allowance of pure atmofpheric air, which I confidered to be of greater importance than all the other remedies; for, deprived of that, all the reft would effect no falutary purpofe. The incalculable mifchief which the want of that fovereign remedy has produced in our hofpitals is well known, and experienced by every medical man of obfervation.

In concluding thefe few remarks, I am fenfible that the fuccefs we met with did not depend on any particular mode of treatment, differing from the common practice; but was more owing to having it in our power to attack difeafe on its firft commencement, before morbid movements had made much impreffion; thereby affording us an opportunity of cutting fhort the difeafe, or at leaft obviating its danger. At the fame time, cleanlinefs and wholefome air were particularly attended to, and every caufe removed which was likely to aggravate fymptoms, or counteract the effect of medicine; while Capt. RAINIER very humanely allowed the fick, wine and frefh diet from his table. Without thofe aids, all our medicines, I fear, would have availed but little.

STEWART HENDERSON.

No. 7, Lancafter-Court, Strand,
March 16th, 1799.

A TABLE,

A TABLE, *shewing the different Diseases and Casualties which occurred on board his Majesty's Ship Astræa, from her leaving England for the Jamaica Station, in January,* 1787, *to her Arrival at Chatham, in June,* 1790; *comprehending a Period of three Years and six Months.*

DISEASES.	
Pulmonic complaints	5
Rheumatism	2
Remittent fever	68
Intermittent fever	52
Slight fever, the effect of cold, or irregularities	97
Dysentery	7
Diarrhœa	25
Hepatic complaints	15
Spasmodic affections	31
Scurvy	4
Epidemic catarrh	50
Ulcers	12
Contusions and slight wounds	372
Fractures	6
Number of Patients	741

Sent to the hospital	111
Invalided to England	11
Died in hospital	8
Died on board	none

	Years.	Months.	Days.
At Sea, or in Ports where no sick were landed	1	2	26
At Port-Royal	1	4	5
In Kingston Harbour	0	9	4
Ports in England	0	2	0

Of the deaths in the hospital, three were from accidents, and one a marine who was ill of a pulmonary complaint, six months before he left England; so that four can only be said to have died from diseases of the climate.

Of the eleven invalided, or sent to England for change of climate, five were received on board, at Jamaica, labouring under chronic complaints, contracted on shore:—Capt. Rainier very humanely received them for that benevolent purpose. From the nature of their disorders, they had no chance of recovering while they remained in the country.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

AS there is among practitioners considerable difference in opinion, with respect to the nature and causes of dysentery, and great variety in its appearance, as well as treatment in different climates; and especially as the method so succesfully employed throughout the East-Indies, of giving mercury in the cure of this disease, may not perhaps be generally known, but which, however, in obstinate cases may be more frequently used

used with advantage in other countries also,—I have ventured to transmit you some observations I have had occasion to make in this disease; in which I have also committed some thoughts on the nature of contagion in general; and, should these be found not altogether unworthy of your considerations, I hope you will do me the honour of inserting them in your useful Journal.—As the cure of dysentery seems now in general to be trusted almost entirely to the use of proper laxatives, I shall here forbear making any observations on the treatment of dysentery, which I have had frequent opportunities of seeing in this country, but confine myself chiefly to the disease as it appeared in a detachment of an European regiment, on their arrival in the East-Indies, in 1796. To this I shall add some account of the appearances on the dissection of those who died of the complaint.

I am, GENTLEMEN, with the greatest respect,
Your most obedient servant,
J. CHRISTIE, 27th Foot.

No. 26, Northumberland-street,
30th April, 1799.

In May, 1796, a detachment, of which I had the charge, consisting of 320 men, of his Majesty's nineteenth regiment of foot, were embarked at Portsmouth for the East-Indies; the greater part of those soldiers were young men under the age of twenty-one, all were healthy, and few had ever been in a hot climate.

After a remarkably fine passage from England, we arrived at Bombay in September following, two men only having been buried during the passage, one of whom died of Ileus, the other of tetanus, arising from a compound fracture, and for which opium in large doses, together with calomel, were unsuccessfully employed; two men were landed ill of flux, and several had symptoms of scurvy, of which they got rapidly clear by proper diet, on their arrival at Bombay.

This detachment on landing, along with a company consisting of an hundred men of the thirty-third regiment, were put into clean, spacious, and airy barracks, situated on a small island, or rather peninsula, almost entirely surrounded by the sea, and distant a mile from Bombay, to which, at low water, there is a communication for foot passengers.

The men were supplied with bedding and light cloathing fit for the climate, and more than usual care and attention were paid by the commanding officer to the diet, regularity, and discipline; whatever could tend to preserve the health and comfort of this detachment, now consisting of upwards of 400, was enforced by the strictest orders: notwithstanding all which, soon after our arrival, in the beginning of September, at the breaking

ing up of the monsoon on the coast of Malabar, symptoms of dysentery, chiefly among the youngest and stoutest, became very general.

The disease attacked the person with the usual symptoms of frequent stools and severe griping: these stools, small in quantity, having a scybalous appearance, and constantly mixed with blood. Costiveness, though very rarely, preceded the disease. The griping, tenesmus, and purging, were always accompanied with fever, apparently inflammatory. The skin was hot and parched, thirst great, pulse frequent, strong and hard, generally beating from 100 to 120 strokes in the minute, but with that peculiar smallness or wiry feel which characterises visceral from other inflammatory affections; and although this disease is in general supposed to be kept up by spasmodic derangement, I would say, from what I have observed in practice, and particularly from the appearances on dissection, that this disease is generally, and when violent, constantly, ushered in with more or less inflammatory action. That type was perhaps the more remarkably observed at this period, from the disease having attacked chiefly the young and plethoric, and those of the most robust constitutions.

Soon after the appearance of the disease, generally about the third or fourth day, and always, when violent, the patient complained of a scalding, and difficulty in voiding urine. In some, this continued throughout the disease, with little inconvenience; in others, those symptoms increased so much, that a complete suppression of urine, requiring the use of the catheter, took place. In general, the violence of the strangury was the surest sign of that of the disease, and few recovered wherein this symptom was obstinate.*

The tenesmus was uncommonly distressing, and so little was voided, that the patient had generally upwards of thirty stools in the course of a day, and in some, two or three in one hour.

Although the fever at first was evidently of inflammatory tendency, yet it was soon followed by great prostration of strength, accompanied with early marks of general putrescency.

In most of the more violent cases, there was great oppression at the præcordia,

* Some have supposed dysuria dysenterica to arise in consequence of a portion of the rectum protruding by the severe tenesmus, and thus carrying along with it, in some measure, the fundus of the bladder, to which it is connected by cellular substance. In this manner they suppose the mouth of the bladder is mechanically elevated and moved from the direct entrance of the urethra, occasioning strangury.—It appears probable to me, however, that some degree of inflammation is communicated from the rectum to the neck of the bladder, and the urine itself appears also to be more than usually acrimonious, and will thereby give rise to the symptom mentioned.

præcordia, attended by nausea and vomiting; in one or two instances there was a voracious appetite.

The disease seldom assumed the appearance of what writers have called *mucosus*, or *dysenteria alba:* when it appeared in this form, it was generally a mark of returning health.

At times, the matter voided appeared to be pure blood, but generally the stools appeared to be mixed with a purulent-like matter, or a kind of sanies, and this, from its acrimony, produced great distress, especially the giving rise to very troublesome sores around the anus: the stools had always an unsually fœtid odour, and indeed the smell of the whole body was remarkably disagreeable. Worms of the lumbrical kind were sometimes voided; and, in one instance, a large one crawled out by the mouth. In the stools there was frequently observed a suety or fatty-like appearance, but most commonly films and portions of a membranous substance were voided; and, when the disease was of long continuance especially, it was astonishing how large the portions of membrane were that came away in this manner.—I have seen pieces at least two or three feet in length, sometimes cylindrical, resembling a small intestine. It appeared to me, as if the inner membrane of the gut had sloughed off; but I must here acknowledge that I did not examine this appearance with that minuteness, to ascertain whether it was really portions of the villous coat, or merely coagulable lymph, poured out from the abraded surface of the intestine, and assuming the appearance mentioned. I know that small portions of the inner coat of the intestines are occasionally voided in dysentery in this manner; but as this is doubted by some, and denied by others, I have now only to regret not having paid more attention to this matter, for in India particularly, such appearances are by no means unfrequent. It is, however, I think most probable, that it is coagulable lymph chiefly, for it seemed to retard but little the recovery of the patient.

In many instances, the febrile state was moderate, and sometimes entirely disappeared, while the proper dysenteric symptoms continued; at other times the fever was kept up, and not unfrequently accompanied with a dull, heavy kind of pain in the right hypochondrium, increasing on pressure, and extending towards the clavicle, plainly shewing the disease to be accompanied with a disordered state of the liver; and in such, a diarrhœa was often observed to continue long after the other dysenteric symptoms disappeared.

By some it has been doubted whether the pain referred to the shoulder and clavicle, so constant in hepatitis, and so frequent in dysentery, should be ascribed to nervous sympathy.—I should suppose there can be little doubt

doubt of this being a nervous affection; and the peculiar feel may be occasioned by the mere bulk and weight acquired by the liver, in its diseased state; for the pains are sometimes distinctly referred to the side of the neck, though most commonly to the clavicle, or tip of the shoulder; but we know a considerable branch of the *par vagum*, on entering the thorax, pretty constantly turns round the subclavian artery, and which sends some branches to those parts complained of in liver diseases. If the stomach, intestines, or pancreas, which are also supplied with nerves from the *par vagum* and the intercostals, were, during their diseased changes, to acquire a proportionate enlargement and weight, as in the liver, it is probable we should, on mere mechanical principles, perceive similar pains in those viscera.

The dysentery, in most cases, began gradually to become less violent in ten or twelve days from the first attack, and would entirely disappear about the fourteenth or fifteenth. In others, all the symptoms would continue with great severity for weeks together; petechiæ would appear on the skin, and the patient becoming weaker and weaker, would sink under all the appearances of putrid fever. In one or two instances, where the inflammatory symptoms ran unusually high, and accompanied with painful and obstinate strangury, the patients were carried off delirious, on the fourth or fifth day of the disease.

Those who had relapses, had the disease most severely; and if the attacks were more than once repeated, few entirely recovered; most of those had some affection of the liver: and here it may be proper to remark, that this organ may be sometimes materially changed, nay, even matter formed in its substance, without ever producing much pain, or shewing any evident external mark.

Causes.—It has been generally alleged and admitted, that dysentery arises from the action of a specific contagion; of the constant presence of which, however, I have long had my doubts, and especially in those cases which were under my care at Bombay. In all, I could trace the disease to have arisen either after intemperance, great fatigue, exposure to, or sleeping in cold wet night air, especially when in a state of intoxication: whether any of these causes, separately or combined, can ever alone produce the disease, or whether they act merely as debilitating causes, thereby favouring the action of the contagion, I cannot take upon me to determine; although, for the reasons already mentioned—from its seldom attacking the temperate and well cloathed, and especially from never having seen the disease under common circumstances, distinctly communicated from one person to another—I believe the former is in most

instances

instances more probable. At Bombay, the bodies of many were in a very putrescent state; the feculent matter of all had an unusually offensive smell, and yet the disease never shewed any signs of a contagious nature.

In Europe, in crouded transports, and in some hospitals, I have observed dysentery assume a contagious appearance: there, however, it seemed to be from accidental circumstances; as the impurity of very confined air—want of cleanliness—want of proper rest—from the bad smell of the patients already labouring under the disease—and especially from the highly offensive feculent matter, acting as a stimulus on the alimentary canal; such circumstances, particularly in hot climates, and acting on exhausted and intemperate constitutions, most commonly seem to be the sole cause of genuine dysentery. In hot climates, particularly in intemperate men, where we find the circulation always considerably accelerated, and debility induced, may not an accumulation of blood be thereby produced in the mesenteric veins, unaided by valves, and otherwise little supported, thus occasion some disorder in the bowels; and as the great gut is found principally to be the seat of the disease, may not this hypothesis be especially applicable to it, from the small number of its absorbents?—The more highly acrid fæces, however, in the colon, appears to be the principal reason of its suffering most materially.

Among accidental causes, independent of contagion, producing dysentery, we may mention an instance stated by Monf. Lasonne, of the Royal Society of Medicine, at Paris, where, in the year 1749, a disease raged among cattle, that died in great numbers, many of whom were buried carelessly near the house of L'Infant Jesus, where numbers of the women in it became affected with dysentery, and other putrid diseases, from the effluvium acting as a stimulus on the alimentary canal.

At Bombay, those addicted to intoxication with toddy* and arrack, were so generally observed to be attacked with dysentery, that any person

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* Toddy is the common name in India for a liquor obtained from the cocoa-nut tree. It is not that mild, sweetish, watery fluid, found in the inside of the nut, but a juice, collected by placing a jar, or kind of receiver, at the top of the tree, around the cut extremity of a peduncle, which produces a bunch of cocoa-nuts. The juice which would have been sent to nourish a bunch of these nuts, is thus collected into the receiver, and when taken down in the mornings, is a pleasantly mild sweet liquor, somewhat resembling new ale; and is in this state frequently taken by the East Indians as a pleasant morning draught. It is gently laxative, but after the heat of the day it ferments, and then becomes very intoxicating, and disposed to affect particularly the alimentary canal. In its fermenting state, the soldiers are very fond of it. From this liquor the best arrack is distilled; and these two liquors are the great bane of the European in India.

on, not at all converſant in medicine, would eaſily fortel to a certainty, that thoſe who were reeling about in the ſun under the influence of this liquor, would be laid up next day with flux. The toddy alone, from its affecting peculiarly the ſtomach and bowels, ſeems to me ſufficient, in many inſtances, to produce the diſeaſe; but this, as well as all intoxicating liquors, by the general excitement produced in the ſyſtem, appears to affect and change the biliary ſecretion, thus acquiring a higher degree of acrimony. and perhaps in this way aſſiſts in aggravating or keeping up the diſeaſe.

That great fatigue under the expoſure of a burning ſun—the drinking large draughts of cold or bad water, when the body is much heated—ſleeping (particularly in a ſtate of intoxication) in night or damp air, are, indeed, not only capable of producing this diſeaſe, and inflammatory affections and fever, but, in ſome inſtances, actually to kill, we have many and various well-authenticated accounts; eſpecially in Dr. Currie's 'Medical Reports,' in his quotation from Quintus Curtius, wherein the army of Alexander the Great ſuffered ſo much in paſſing through a very ſterile, ſandy country, deſtitute of water, but which (after long thirſt and great fatigue) being obtained, the ſoldiers drank ſo greedily, that many died in conſequence almoſt inſtantly.

About the year 1780, at the time military operations were carrying on in India, againſt Hyder Ally and the French, when ſome Highland regiments were ſent to that quarter of the world, we find ſeveral very ſtriking and melancholy examples of the effects of great heat and fatigue on European conſtitutions: the 72d regiment in particular, ſoon after their arrival in India, in one march, left behind them two hundred men; many of theſe expired almoſt inſtantly, through mere oppreſſion; the greater number of the reſt died of fluxes, and fever in conſequence.

In June 1794, at the time I accompanied the army under the command of Earl Moira, which diſembarked at Oſtend, for the purpoſe of forming a junction with that under the command of his Royal Highneſs the Duke of York, in Flanders, we had exceſſively long and fatiguing marches between Oſtend and Ghent. The weather was unuſually ſultry;—ſeveral of the ſoldiers then dropped down in a ſtate of inſenſibility, or coma—others were ſeized with purely apoplectic ſymptoms—and all were remarkably relieved by means of blood-letting.

Of the effects of ſuch cauſes, I ſaw a ſtill more ſtriking and melancholy example in India, 1797; where an European regiment, little habituated to the climate,* but very much addicted to drunkenneſs, and quartered

. It has been generally ſuppoſed to be a part of a commanding officer's duty, gradually to

quartered in a station where arrack was sold remarkably cheap—the men, after a night's debauch, were taken out in the morning to be marched a few miles to sober their senses, as it was called. This was *certainly* necessary; for before leaving the parade, many were yet reeling. They were marched a few miles—the sun rose—the men lagged—many dropped—six were brought in dead—not one fourth of the regiment kept together to the fort—above a hundred were taken to the regimental hospital—and several died in consequence of being attacked with fever and fluxes. The lives of many were saved by the use of blood-letting, from being apparently attacked with phrenitis: and this circumstance calls strongly back to my recollection, the laxity of medical discipline which I observed at that time, in that part of the world. Under no circumstances, in my opinion, is the presence of the medical man more indispensibly necessary, than when his regiment is on the march; no pretence whatever should at such times authorize his absence; in no climate, perhaps, in such cases may a surgeon be more likely to be of real benefit.—The medical allowances granted by the Hon. East-India Company to European regiments are not only remarkably liberal, but in fact unnecessarily extravagant: the war-allowance for medical attendance for a thousand men exceeds five thousand pounds a year! and yet, strange to tell, there was not one medical man, black or white, to be seen the whole time the regiment was on its march, at the time the men were falling every minute. If fifty guineas a month are allowed for doolies * on such occasions, I do not see why they should be withheld. If a surgeon is allowed besides, three hundred guineas a month for attending on the sick, I do not conceive what indulgence he can claim for being absent. The mind of man becomes in a variety of ways relaxed, and enervated, and peevish, and fond of sensual gratifications in an Indian climate. *We* know female charms, even in tawny Hindoo colours, in the cool mornings, on the shores of Coromandel, or the plains at Columbo, are very fascinating, very enticing; but surely the soft murmurs of languishment or the toilsome pleasures of private duty, should never interfere with that duty which is indeed of an important nature—that duty where the *lives* of our fellow creatures are at stake, and in our hands!

From these instances, and a number of others which might be mentioned, we find a variety of diseases brought on, seemingly by the same causes,

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to season his men to the climate. Youthful European constitutions will not bear the fatigues of drilling and marching, till they are accustomed to the climate.

* Doolies are a kind of palanquin, or couch, carried by two or more men, in the rear of regiments, while on fatiguing marches, for conveying those men who happen to be taken ill.

causes, namely, excessive fatigue, with great heat, occasioning fever, dysentery, phrenitis, hepatitis, and apoplexy. Is it probable, that in the two former there was the action of a peculiar contagion? Or, are we not rather to suppose the same external causes produced all the different diseases?

The nature of all contagions seems to be but little understood, and what is frequently said on the subject appears to me to be involved in much obscurity; but the bodies of men, placed in certain situations and circumstances, and vegetable matter undergoing certain changes, appear to be capable of generating certain morbific poisons, occasioning certain specific diseases, and at times, as I think, without any of the parent poison (if the expression will be allowed), being primarily present. Contagious fevers and fluxes, appearing frequently in crouded situations, and particularly the manner in which the yellow fever broke out in America, seem to favour this opinion; while I think it true, that contagions may be evolved from accidental circumstances, I think it also not improbable, that all morbid poisons may at first have arisen in this manner, and that all may exist in effluvium, or a gaseous state only; and though it appears likely that some, as that of syphilis, or hydrophobia, &c. are communicated in a palpable or visible form, others, as that of the small-pox, exist only in the gaseous state, involved and communicated by the medium of different vehicles, namely, the air and purulent matter, and thus giving rise to the disease as it appears in the natural and inoculated way. When we speak of the variolous poison being communicated in the palpable form, and in the state of effluvium, it conveys to our mind, as if there was some difference both in the form and nature of the contagion; and it is said, when the poison is communicated in the state of effluvium by the air, or where the disease appears in the natural way, the symptoms of the small-pox are longer in appearing. This is certainly true, but may not the difference arise from the manner in which the contagion is applied? When the disease arises in the natural way, I would say, the symptoms are longer in appearing, because then the poison is most probably taken in by the lungs or skin, and there, or about the throat, meeting and blending with mucous matter on a healthy surface, it is for some time prevented from being absorbed, and shewing its effects on the constitution; while the poison, as it is communicated through the medium of pus, and by the puncture of the lancet, immediately applied to the action of the absorbent, its effects are thus more early produced. Some years ago I remarked the following fact:—A child with a sore, in consequence of inflammation on one of the tonsils, was unguardedly taken into a house where several patients were labouring under natural small-pox. The symptoms of the small-pox began to appear in the child in nine days thereafter.

Here

Here then we find the diseafe appearing in the ufual time of inoculation. Was this in confequence of the poifon being applied by the atmofphere to an actively abforbing furface—the fore in the throat? Or had the child received the infection before entering the houfe where the difeafe was? Certain it is, however, the healing of the fore on the tonfil was arrefted, became more inflamed and larger during the difeafe, which, upon the whole, was mild. I confider the difference of the violence of fmall-pox to arife chiefly from the quantity of the poifon thrown into the fyftem: perhaps too, its being involved in that bland matter, pus, its virulence may in fome meafure be diminifhed; and why inoculation fhould fometimes produce a violent difeafe, may arife from peculiarity of conftitution, heat of the air, and other circumftances. I cannot fuppofe the variolous matter can be at all compared to a ferment, for then inoculation fhould, in every inftance, be attended with as violent a difeafe as that arifing in the common way. The original quantity alone introduced into the fyftem, appears to be evolved and fet into activity by the heat in the fluids of our body, and the poifon may not have the power of generating more, until pus begin to be formed in the puftules;—analogous in fome way, perhaps, to what we obferve in various fubftances, particularly in manganefe, which, when expofed to confiderable heat, gives out great quantities of oxygen gas, and after being entirely robbed of it, will again, on expofure to the air, charge itfelf with the fame matter. In fome parts of Scotland they have a cuftom of taking the variolous matter from the puftule when begining to form, and they think this in general produces a milder difeafe.

[To be continued in our next Number.]

To the Editors of the Medical and Phyfical Journal.

GENTLEMEN,

IF the following communication accords with the plan of "*The Medical and Phyfical Journal,*" and you think it worth inferting, your notice of it will much oblige

Yours,

JOHN PROCTOR, Jun.

THE *unguentum hydrargyri* being a medicine much ufed, and the preparation of it rather troublefome, feveral expedients have been tried to facilitate the procefs; moft of which are, however, more or lefs exceptionable, either on account of injuring the colour of the ointment, giving it a bad fmell, or of being productive of difagreeable effects in the ufing of it: fuch

ſuch are the ol. ſulphurat. the turpentines, &c. An improvement is noticed in No. 6, of the "*Phil. Mag.* which is, the addition of a very minute portion of flor. ſulph. (ſulph. ſublimat.) which I find, upon trial, extinguiſhes the quickſilver very readily, but the ointment was of a bad colour; and a larger quantity of ſulphur would probably make it almoſt black. I was led to try a little empyreumatic, or rancid fat, from the hint given in the following note in "*Fourcroy's Chemiſtry*," vol. ii. page 248, firſt edition, and found it anſwer beyond any thing I had ever uſed before for this purpoſe. It not only combines in a very ſhort time with the quickſilver, but the colour of the ointment is equal, if not ſuperior, to any that can be made with the pureſt fat without this addition. "In this ointment, the particles of the mercury do not merely ſeem to be diſtributed and interſperſed among the particles of the fat, without any adherence or chemical union; on the contrary, the oily matter of mercurial ointment very quickly becomes rancid; and we know that rancidity, or incipient acidification, is always the conſequence of the combination of oil with ſome other ſubſtance (now known to be oxygen, which it ſeems diſpoſed to abſorb more quickly by being united with a metallic ſubſtance). When the ointment is old, if we rub a portion of it between two bits of paper, the whole of the oil is abſorbed, without leaving any globules of mercury viſible behind it: but when we treat mercurial ointment, recently prepared in the ſame manner, we can very readily perceive a great number of metallic particles quite diſtinct. M. Beaumé took equal quantities of mercurial ointment; one of which was newly made, and the other become ſlightly rancid by keeping. He kept both of them in a ſtate of liquefaction during eight days, in a degree of heat much below what could poſſibly decompoſe the fat. The newly-made ointment allowed three drachms of mercury to ſeparate; the other, which was rancid, only one drachm and a half. All theſe obſervations do not allow us to doubt of the reality of the combination; they pointedly prove, that what we call the extinction of mercury in fat, is not purely the effect of mechanical diviſion, ſince thoſe two ſubſtances exert a ſlow ſpontaneous action upon one another, from which a more intimate union at length reſults. This is much confirmed, by obſerving the difference in colour and conſiſtence between old and new ointment. New made ointment is of a very light colour, and extremely ſoft; while what has been kept for ſome time is much darker in colour, and much firmer in conſiſtence: a ſufficient proof of ſome change in the intimacy of their union. We are in the next place to enquire in what ſtate the mercury unites with the fat, whether in form of a metal, or in form of a calx (oxyd).

"When old mercurial ointment is converted into a ſaponaceous compound by the addition of cauſtic alkali, there is always a quantity of fluid mercury

mercury ſeparated from the mixture, the fat forſaking the mercury to unite with the alkali. Mercurial ointment is alſo decompoſed by the action of ether upon it. When a ſmall quantity of good mercurial ointment is put into a flaſk, which is two thirds full of ether and diſtilled water, and the mixture frequently ſhaken, the mercury ſoon begins to precipitate, carrying a ſmall portion of fat along with it, which gives the mercury the appearance of a calx; but this fat ſoon diſappears, and the mercury unites in the form of metallic globules, by ſimply drying it upon bibulous paper. By this analyſis, we collect almoſt the whole of the mercury in a fluid ſtate. In reviewing all theſe facts carefully, it ſeems probable, that the mode in which mercury combines with fat, more reſembles the amalgamation of the metals with mercury, than their diſſolution in acids, as the mercury is taken up in a metallic ſtate, and not calcined (oxydated); the fatty matter ſerving the purpoſe of a ſolvent to the mercury in the preparation of mercurial ointment, in the ſame way that mercury itſelf ſerves the purpoſe of a ſolvent to the other metals, in the combination of the different amalgams."

I have copied the whole of this note, for the purpoſe of introducing ſome remarks upon it, which may perhaps explain more clearly the nature of this combination. I conſider mercury to be ſimply mechanically divided by being triturated (till totally extinguiſhed) in *pure ſweet* fat; for upon rubbing the mixture upon the ſurface of any body which will either abſorb the fat, or allow it ſpace to be diffuſed upon, the mercury preſently re-unites into ſmall globules, as in its original ſtate; and this happens from the connection between it and the dividing matter (fat) being deſtroyed. But when the ointment has been kept ſome time, no ſuch effect takes place, becauſe the union becomes more intimate in conſequence of the fat undergoing a change, by which it really does diſſolve part, and in time, the whole of the mercury, and this change is no other than a gradual acidification, which it ſeems more readily to undergo from its combination with the mercury, by the abſorption of oxygen from the atmoſphere. The ſmell, which would betray its rancidity, or acidification, cannot be perceived till all the mercury is combined with the ſebacic acid, when the ſuperabundant quantity of fat, having no metal to neutralize, or rather to ſaturate its acid, will of courſe become ſenſible to the ſmell. As a proof of this, old mercurial ointment will readily take a conſiderable addition of freſh mercury, and in this way I at once prepare the ung. hydrarg. fort. by adding a proportionable quantity of mercury to a weaker ointment, conſiſting of one part of the metal to four of fat.

Led by this conſideration of the nature of mercurial ointment, I found, upon trial, that a ſmall portion of rancid fat extinguiſhed a large one of quickſilver,

quickſilver, without communicating any diſagreeable ſmell to the ointment when made. Should the fat be any way ſtiff or hard, it may be ſoftened with a little oil of the ſame nature. Train-oil anſwers very well; as it ſpontaneouſly melts from the blubber, before it has undergone any change from heat, it is quite ſweet, and free from ſmell: perhaps the large quantity of animal mucilage that is combined with it, may haſten its change in the ordinary temperature of our climate in ſummer; but, as in the caſe of other animal fats, its ſmell is quite deſtroyed, when combined with a metal. The cauſe of the rancidity of oil, may furniſh ſome hints for their edulcoration; but, beſides neutralizing and waſting their diſengaged acid, it is neceſſary to ſeparate the mucilage which is combined with them, either by preſſure, or in the proceſs of obtaining them by boiling, and which is depoſited from ſeveral in conſiderable quantity, on ſtanding at reſt for ſome time. What is the preciſe difference between the mucilage of animal and vegetable oils; and in what degree do they contribute to accelerate the rancidity or putreſcency of theſe oils?—The firſt of theſe ſtates I conſider to be owing to the abſorption of oxygen, and the other to the diſengagement of volatile alkali.

On the principles of the foregoing theory, I have tried with equal ſucceſs, the effects of rancid vegetable oil, in making the emplaſt. litharg. and have found the proceſs much ſhortened when I have uſed this kind of oil, and the plaiſter, when made, equally good, if not better, than that made with ſweet oil. Upon the whole, I conſider the mercurial ointment to be a true ſebat of mercury, combined with a more or leſs conſiderable portion of *uncombined* fat, according to the length of time it has been kept. The experiment with ether is nearly ſimilar to the mixture of any other metal diſſolved in an acid with this liquor. The ſolution of gold in aqua regia, and the tinct. ferri. mur. when mixed with ether, exhibit nearly the ſame phenomenon, viz. the reduction of the oxyd, by the abſtraction of its oxygen.

It is far from being conſiſtent with a true knowledge of chemiſtry, to compare the combination of mercury with fat to an amalgam; there is not the moſt diſtant analogy between theſe two compounds. Were I to draw a compariſon between a mixture of mercury with other metals, and any other mixture reſembling it, I would beg leave to mention that of wax, reſin, and oil, which agrees exactly with it, as to its ſtate, though it differs materially from it in the nature of its component parts. Mercury is in the one compound exactly what the oil is in the other; with reſpect to ſolidity, they differ in nothing from the other ingredients of their reſpective combinations, but in being fluid at a lower temperature,

or

or containing a greater quantity of latent heat, a portion of which they yield to the other parts of the compoſition, and ſo form a maſs of an homogeneous conſiſtence and appearance. The ſimilarity is rendered ſtill more conformable, if we ſuddenly cool a mixture of the unctuous ſubſtances, when each of them will be diſtinctly perceptible, by the difference of conſiſtence.

Other chemical ſubſtances are capable of producing their effects in the ſyſtem by abſorption, when externally applied, as well as mercury: arſenic and tartarized antimony have furniſhed ſeveral inſtances of this mode of action.

A Comparative View of the Modern Medical Theories, and their Agreement with Practical Facts and Obſervations.—By N. P. Gilbert.

[A Memoir read at the Meeting of the Medical Society of Paris, Dec. 12, 1798.]

If it be true that health is the firſt of bleſſings, the art of preſerving it, and reſtoring it when impaired by diſeaſe, is undoubtedly the moſt uſeful of arts. This may be defined the ſcience of obſervation, and that of availing ourſelves of favourable opportunities in regulating the functions of the human body. Since the progreſs of the *curative art* is directed by this double guide; ſince the knowledge of paſt ages is not loſt to the preſent; its laws are clear, its precepts eaſy to be comprehended, and their application often ſucceſsful. If we conſult the annals of the infancy of ſcience, we ſhall find, that the firſt phyſician was inſtinct, and the firſt elements of medicine were the leſſons of nature, gradually ſtrengthened by thoſe of experience. It is impoſſible to reflect on the early hiſtory of medicine, without being ſenſibly ſtruck. The ſick were expoſed in the temples, or other public places; the citizens began the work of the day, by hoſpitable viſits to theſe retreats of diſtreſs. Perſons who had been afflicted with maladies ſimilar to thoſe of the objects of their viſit, adminiſtered the remedies which they had found of advantage in their own caſes. Thus did men profit by the experience of each other. This general and lively ſympathy, theſe affecting fraternal attentions, this religious anxiety to relieve our fellow-creatures, had an inexpreſſible attraction, which cannot but excite our regret for the diſuſe of this ancient cuſtom. Happy golden age! in which the delightful union of phyſical frugality, and moral purity of life, extended a healthy and tranquil ſtate of man to the period aſſigned by nature; and left to that provident and wiſe mother all the energy which ſhe required to counteract with ſucceſs

ſucceſs the deſtructive influence of external agents! Civilization daily increaſed the wants and the paſſions of men; they ſoon abandoned experimental medicine, which, indeed, was obliged to creep along from experiment to experiment, often unſucceſsfully; but for theſe they ſubſtituted a hypothetical ſyſtem of medicine, which did not fail continually to miſlead them. Hippocrates aroſe, who, if he was not the creator of medical ſcience, may unqueſtionably be conſidered as its father and legiſlator. This great man immediately wreſted medicine from the hands of the prieſts, who had made it a matter of religion, enveloping it in the thick veil of myſtery and ſuperſtition. He collected the principal diſcoveries handed down by tradition; he ſubmitted facts to the teſt of ſound reaſoning, and founded the ſcience upon the ruins of thoſe fanciful ſyſtems that had preceded it. Whence is it, that ſo bright an example has found ſo few imitators? By what fatality was it, that the path of practical medicine, ſuddenly raiſed by the genius of this celebrated legiſlator to an eminent degree of perfection, was ſo ſoon abandoned, and would have fallen into diſgraceful oblivion, if a few men of enlightened minds had not, from age to age, been at pains to preſerve it?

Theſe deplorable errors have, in all ages, been the produce of ſanguine and ambitious men. Led aſtray by too lively an imagination, ſtrongly influenced by the philoſophical opinions of the day, they ſubſtituted the glitter and luxury of ſcience for ſimple facts and obſervations; they created oppoſite ſyſtems; founded inimical ſects; ſurrendered medicine to theories generally unfounded, and enveloped experience in impenetrable clouds.

However, in eſtabliſhing the principle, that all ſyſtems have retarded the progreſs of the healing art, let us do juſtice to the intentions of truly eſtimable phyſicians, who have been driven into that vortex: what other objects could they have, than to perfect the ſcience, facilitate its ſtudy, and ſimplify its practice?

Of this truth we ſhall be convinced, if we obſerve, that every ſyſtem is not ſo much the error of the innovator, as of the age in which he lived. Moſt medical theories owe their origin to the rapid movement which is ſo general and irreſiſtible among men of talent, in favour of a predominant opinion.

It muſt be granted, that there has not probably been one ſyſtem of medicine which, however dangerous from its indiſcriminate application, has not been productive of intereſting practical obſervations, valuable facts, and even frequently beneficial medical precepts.

It would therefore be an uſeful work, to enumerate and deſcribe all theſe different theories, ſo as to advance the progreſs of practical medicine. Such

a work* would be extremely interesting, particularly at this time, when a new system of medicine, after having enjoyed high reputation in England, Germany, and Italy, is seeking to naturalize itself in the soil of this immense republic; at this time, when the brilliant discoveries of modern chemistry tend, perhaps, to produce in the school of medicine a revolution more complete than any that has heretofore taken place. Will the healing art gain or lose by the establishment of these new medical theories?—how ought they to be received by physicians, anxious to perfectionate the art?—how far ought they to have a place in the present plan of study?—what part ought to be taken in the midst of their enthusiastic sectaries, and their obstinate antagonists?—Such are the questions which the medical philosopher will propose to himself in his study. The solution of these problems demands, no doubt, the most profound deliberation. I feel how much such an undertaking is beyond my abilities. I shall, however, attempt to trace the outlines of the inquiry, leaving it to a more experienced pen to finish the picture.

The doctrine of STOLL; the theory of BROWN; the application of the principles of modern chemistry to the art of healing, or chemical pathology;—these are the theories which I purpose succinctly to analyse. I shall compare them with each other, and consider their greater or less influence on the practice of medicine.

The principles of the humoral pathology, established by observation, and consecrated by a judicious and successful practice, the powerful influence of the *annual constitutions*, and of the periodical return of the seasons, upon the generation and succession of febrile disease;—such are the foundations of the doctrine of Stoll. It is not a theory or a system: the systems of medicine have uniformly been founded upon an hypothesis or abstract principle; the doctrine of Stoll rests upon facts. Consult his clinical annals *(Ratio medendi)*: who deserves better of medical science, if allowance be made for the disgusting prolixity which characterises the greater part of scientific and literary German works? Who furnishes the young practitioner with better advice, to confine himself to a general rational method, when the curative indications are not obvious and satisfactory? Who deprecates more strongly submission to hypothesis and opinion?

Stoll was the man who established the principle, or rather, who revived the doctrine of Hippocrates, tending to prove that the season of the year determines the production of the material cause of fevers, while their form and seat depend upon the pre-disposing causes, and the mode of life adopted by

* It already exists in "Sprengel's *History of Medicine*," 3 vol. 8vo. (in German.) See No. I. p. 83, of this Journal.

by the individual; hence several diseases, which appear very distinct from each other by their symptoms, are analogous in their causes, and yield to a similar treatment.

Thus far have we been able to recognize in the clinical practice of Stoll, a physician truly Hippocratical, and guided by observation. Why has he not followed the same method in the precepts he has given us? Why, after having declared himself the enemy of theories, has he, in his aphorisms, adopted the theory of Boerhaave? It is indeed modified, reformed, and, in many points, not essentially different from the present state of the science; yet the laws of physics and mechanics are still there applied, without qualification, to explain the phenomena of health and disease; humoral pathology is throughout predominant; he takes no notice of that sublime doctrine of the *vital principle* and *organic movement*, which are so well unfolded in the writings of BORDEU. The 'Aphorisms' of Stoll, perhaps the only elementary medical book now extant, ought then to be read with due precaution. If put into the hands of the young practitioner, ever eager in the pursuit of science and erudition, ever anxious to explain facts, it may divert him from the practical study of medicine, prejudice his mind in favour of a system, and conduct him to fatal deviations; unless the prudence of a judicious interpreter, the talents of an enlightened and philosophical commentator, distinguish in this work between that which belongs to the medical dogmas, to the doctrine of Hippocrates, and that which is merely the result of an ingenious theory.

Before entering upon the examination of the new modern systems, it may be proper to take a general view of the state of medicine in Europe, about the middle, or towards the end, of the present century.

(To be resumed in our next.)

An Account of the Factitious Mineral Waters of Citizen GOLDSCHMID.

[*Extracted from the 'Recueil Periodique de la Societé de Médicine de Paris, of Ventôse. An. vii. February,* 1799.]

[Accompanied by an Engraving.]

IN our last Number, p. 296, we announced Citizen GOLDSCHMID's memoir, and the superior virtues which he asserts his artificial Seltzer, Spa, and Sedlitz waters possess over those from the natural springs. We now proceed to lay before our readers, an account of these artificial waters, as contained in a report of Citizens BOUILLON LA GRANGE, and CHAUSSIER,

CHAUSSIER, read in the Medical Society of Paris, on the 27th Pluviôſe (15th February).

By this report it appears, that they examined three diſtinct ſpecies of artificial mineral waters; namely, thoſe of Seltz, Spa, and Sedlitz.

Their firſt care was to aſcertain the phyſical properties; they found them very clear and tranſparent, having a ſtrong acid flavour; and that they gave the tincture of turnſol a deep red colour. By putting them in contact with different re-agents, they obtained, firſt, by cauſtic alkalis, neutral ſalts; ſecondly, by lime water, an abundant carbonate of lime; thirdly, poured on filings of very pure iron, the artificial waters, in a ſhort time, acquired a ferruginous taſte, which, after the properties already diſcovered, confirmed the preſence of the carbonic acid and its action on the iron.

They then proceeded to examine the nature of the ſalts employed, and the quantity of carbonic acid which each bottle might contain. The methods followed to aſcertain the compoſition of theſe waters, afford no novelty; the ſaline ſubſtances, however, employed, were ſimilar to thoſe deſcribed by BERGMANN. Upon the whole it appeared that the author had completely ſucceeded, and produced an exact imitation of nature.

As to the carbonic acid which theſe waters poſſeſs in ſolution, experience ſhews, they have a greater quantity than the natural waters. But in order to aſcertain this quantity with the greateſt exactneſs, Citizen Goldſchmid has invented a very ingenious apparatus. (See the annexed engraving.*) By this apparatus it was diſcovered, that the waters contained twice and a half their volume of carbonic acid. The author even went ſo far as to aſſert, that he could ſeparate three times their volume. But this ſuperabundant quantity eaſily diſengages itſelf, not only by being agitated, but by an elevation of temperature. Such an exceſs of acid is therefore uſeleſs, eſpecially in medical practice.

The Medical Society alſo deſired the Citizens Bouillon La Grange, and Chauſſier, to examine the difference which exiſted between the artificial mineral waters of Goldſchmid, and thoſe of Citizen GOSSE, of Geneva; but from the impoſſibility of procuring thoſe of the latter, as recently prepared as thoſe of the former, they were unable to make a fair trial. It is certainly very eaſy to conceive, that water which has been agitated by travelling,

* This apparatus may ſerve to obtain any other gas. It poſſeſſes the peculiar advantage of preventing the eſcape of the ſmalleſt portion, and, therefore of aſcertaining with the moſt ſcrupulous exactneſs the quantity of gas held in a liquid in ſolution.

velling, or which has been prepared any length of time, whether in a cellar or any other place, will not bear a comparison with water which has been saturated only a few days. The two commissioners, therefore, had recourse to the report made by their colleague, Deyeux, to the School of Medicine, who had carefully examined the artificial water of Citizen Gosse.

"Two pounds" says that chemist, "of this water, placed under mercury, afforded twice and a half their volume of carbonic acid, the half of which was separated spontaneously, and the other half by plunging the bottle into hot water."

It is evident from this, that there exists a great analogy in the result of the two experiments, since each of the waters contain twice and a half their volume of carbonic acid: and it is also evident, that there is no difference between the mineral waters of Goldschmid and those of Gosse; for, besides the equal quantity of carbonic acid, the chemical examination of the salts in dissolution, afforded the same results as those mentioned in the report of Citizen Deyeux.

This comparison must nevertheless be of great advantage to those who prescribe or make use of these artificial mineral waters, as it will enable them to obtain them of a proper degree of acidity; for it is evident from the experiments of Citizen Goldschmid, that it is possible to supersaturate the water with the acid.

It appears that these artificial waters have been employed with great success in different maladies by several French physicians; and Bouillon La Grange, and Chaussier, conclude their report by recommending the establishment of a manufactory for them in Paris, in order to insure their being accurately and faithfully prepared, and also by declaring Citizen Goldschmid deserving both of attention and encouragement.

Explanation of the Gasolitre:—By Citizen Goldschmid.

"THE method hitherto used to ascertain the quantity of carbonic acid gas by lime-water, appeared to me very troublesome, not only because it at the same time precipitates the iron, the magnesia, and other earthy substances, which we are afterwards forced to separate, and because the operation of filtering always occasions a certain waste, but because the access of atmospheric air contributes, in a great degree, to form carbonate of lime.

"The pneumato-chemical apparatus with mercury, which is at present in use, has the disadvantage of being always equilibrium with the pressure of

of the atmoſpheric air; and is conſequently obedient to the laws of the barometer.

" Theſe ſeveral difficulties urged me to an endeavour at avoiding thoſe obſtacles, which I have overcome by the invention of the Gaſolitre: this apparatus being fully adapted to calculate with accuracy, and in a ſhort time, the gaſeous parts contained in any body whatever, and to ſhew the preſſure.

" Fig. P is a glaſs meaſure containing two centilitres, or two drachms fifty grains: in fitting it with its cock for a double current of air, to the tube G, the cylinder C being full of mercury, the cock B ſhut, and the apparatus deprived of all poſſibility of admitting the atmoſpheric air, we ſhall find, in opening the cock H, that no vacuum is occaſioned in the cylinder C beſides that which is formed of the bubbles of air between the glaſs and the mercury, in filling the cylinder under the preſſure of the atmoſphere of ſeventy-five centimetres, or about twenty-eight inches, and that which the difference of the column of mercury in the cylinder C and the volume of air in the meaſure P under a preſſure of ſeventy-five centimetres, reduced to zero, can produce.

" We ſhall find this ſtatement accurate in opening the cock Q to communicate the preſſure of the atmoſpheric air into the meaſure P: in then ſhutting it oppoſite Z it will not produce a greater vacuum in the cylinder C than the preſſure of the volume of air in P has been able to effect.

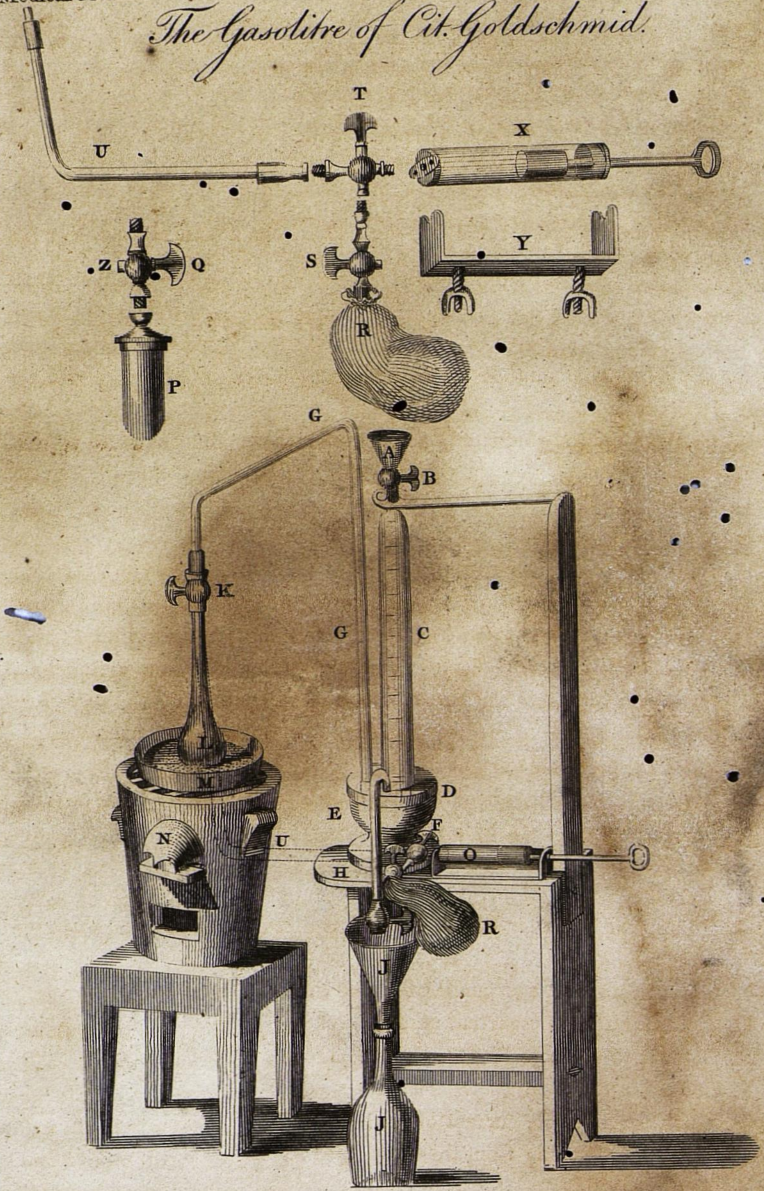
" The little pump O, placed on the ſtand F, ſerves to graduate the cylinder C. We fill the bladder of gas, which we intend to meaſure, and open the cock S and T to draw a volume of gas, at all times equal, into the pump; we open the cock T oppoſite U, ſhutting it at the ſame time oppoſite S, and puſh forward the piſton to introduce the gas into the cylinder C filled with mercury, and ſhut by the cock B: when the cock H does not ſupply more mercury, we continue in this manner to introduce at intervals the ſame volume of gas into the cylinder C, in order to graduate it.

" We ſhall obtain the firſt time a greater vacuum on account of the preſſure of ſeventy five centimetres, where the mercury meets; this preſſure ceaſes the ſecond and following times, when it will be of an equal volume.

" The operation will never be attended with ſucceſs, if the external air can penetrate: it is, however, eaſy to aſcertain this by the cock H, which, when the whole is well adjuſted and ſhut, does not furniſh more mercury, after the effort of the preſſure before explained.

To

The Gasolitre of Cit. Goldschmid.



Printed for R. Phillips 71, St. Paul's Church Yard.

To know the quantity of gas which the gaſeous waters contain, we thus diſpoſe the apparatus.

"We ſhut the cock H and fill the cylinder C with mercury; we ſhut the cocks B and K, and open the cock A, to aſcertain the ſtate of the apparatus; if the apparatus be in proper order, it will not make a vacuum in the cylinder C, farther than the firſt mark; we fill the matraſs up to the neck with the water we intend to analyſe, and carefully fit the matraſs to the cock K, by a ſcrew provided with a little ſhield of leather: the whole being well ſecured, we open the cocks K and H, and heat the water to the boiling point."

EXPLANATION OF THE PLATE.

A. Glaſs funnel to pour in the mercury.

B. Iron cock.

C. Glaſs cylinder, graduated, ſhut by the cock, and cemented on the plate D.

D. Delft plate.

E. Wooden ſtand.

F. Stand to ſupport the apparatus.

G. Glaſs tube, the cavity of which is of the diameter of one millimetre, about half a line, and which communicates with the cylinder C.

H. Tube of the ſame diameter, communicating with the cylinder C, and returning into the bottle J by an iron cock.

J. Bottle and funnel to receive the mercury.

K. Cock for a double current of air.

L. Matraſs containing about twelve centilitres of water, (four ounces) ſecured to the cock by a ſcrew.

M. Sand bath.

N. Furnace.

O. Pump, the cylinder of which is glaſs, ſecured by two ſcrews to the ſtand F.

P. Glaſs meaſure of two centilitres, or 6 drachms twenty-eight grains.

Q. Cock for a double current of air.

R. Bladder to contain the gas.

S. Cock.

T. Cock for a double current of air.

U. Glaſs pipe coming from the cock T to K.

X. Pump.

Y. Stand on which to fix the pump.

Z. Index of the ſecond current of air.

A Comparative

A Comparative View of the principal Theories which have prevailed in Chemiſtry, &c. By Dr. FRANK, *ſen. of Vienna.*

[*Concluded from Numb.* III. *pp.* 269—273.]

WHEN we attentively conſider the phenomena which natural bodies exhibit to our ſenſes; when we compare the relative conditions in which theſe bodies are placed in reſpect to others, we are enabled to abſtract certain rules or principles, by which we can aſcertain the relation of ſuch bodies, before they are expoſed to cauſes which will produce various effects on them; or, in other words, from the reciprocal affinity ſubſiſting between bodies, we are able to determine their momentary relation to others, whether known or unknown. We know, for inſtance, from obſervations and experiments accurately made, that all inflammable bodies aſſume the ſtate of combuſtion, and remain in it only as long as they are in contact with oxygen, in different degrees of temperature: hence we are led to conclude, that in every inſtance where inflammable bodies are placed in contact with oxygen, and in the requiſite temperature, combuſtion will neceſſarily take place; and, on a ſimilar foundation, we predicate in every proceſs of combuſtion, that an inflammable body and oxygen are the two active agents.

Such a law or principle, therefore, as is derived from pure experience, and is calculated to explain a particular phenomenon in the material world, is called a *theory*; while the aggregate of ſuch principles as enable us to explain a number of phenomena, or a whole ſeries of events, is termed a *ſyſtem*.

The philoſophic inquirer will, however, ſoon remark, that no experimental purſuits poſſeſs mathematical certainty; that the criterion of *certainty* cannot be diſcovered in the explanation of all the phenomena of nature; and that we muſt be ſatisfied, in almoſt every inſtance, with greater or leſs *probability*.

However diſcouraging this circumſtance may be to the progreſs of the human mind in ſcientific reſearches, it is, at the ſame time, attended with beneficial conſequences: for it is this imperfection in man, conſidered as a reflecting being, that urges him to inveſtigate with ſo much zeal, the cauſes of the phenomena taking place, whether in the circle of animate or inanimate nature; and to trace thoſe hidden or manifeſt powers, by which ſhe produces the endleſs variety of phyſical effects.

As long as theſe cauſes are diſcoverable by the reaſoning faculty of man, he will not readily deviate from the true path of inquiry; as he is capable of avoiding whatever may divert his attention, or diſturb him in the perception of ſuch phenomena.

But we are not, in every inſtance, equally fortunate: theſe cauſes frequently vaniſh from our reſearches; ſometimes they are covered by an impene-

impenetrable veil, and removed from the perception of the most sagacious inquirer. When the capacity and application of the external organs are suspended, our perceptive faculty is likewise arrested: thus the indefinite characters vanish from the circle of sensible qualities; and not being able to ascertain the necessary condition of our intuitive knowledge, *i. e.* that of *space* and *time*, we are at once checked in our search after certainty. Nevertheless, man is ever anxious to indulge in such inquiries, as he is extremely averse to leaving off, where the senses resign their office to the understanding. His intellectual powers revolt at such fetters, and, venturing into the regions of fancy, an immense field of ideas presents itself to his view; in the developement of which, he finds ample scope for the exercise of his mental faculties. He compares, combines, and arranges his ideas, being principally guided by *analogy*. He adopts this as the scale by which he measures the relative truth of his notions; it serves him as a surrogate of perception, and is his faithful companion in every step. But, if he meet with obstacles, and this resource fail him, he is obliged as it were, to build a bridge, and to substitute an *hypothesis*, in order to cover a chasm which he cannot, without reluctance, suffer to remain entirely open.

As we cannot, in the immense field of physics, always attain positive knowledge, we are very frequently obliged to be satisfied with opinions and conjectures; if these be accompanied with plausible arguments, our satisfaction will be more or less complete. The highest degree of probability, and complete applicability, therefore, are the characters of a well-founded hypothesis—it ought to be perfectly consistent with nature; its principles should be simple, and of universal application.

Let this introduction suffice to explain the point of view from which the theories of every experimental science, and consequently those of chemistry, ought to be considered by the inquisitive student. It is necessary that he should previously settle that point, in order to prevent him either from raising the theory too high, or degrading it more than it actually deserves. Facts ever remain unaltered: but the manner of explaining them may be different. An accurate estimation of the methods adopted to account for the phenomena of nature, and a cool comparison with the facts on which they rest, will soon enable us to discover whether the one or the other of these methods deserve the preference; so that neither length of time, nor the authority of names, nor the country of the founder of a particular theory, ought to influence our determination. Such distinctions are neither rational nor scientific; for in the pursuits of science, we should attend to facts only, without paying regard to their origin; or who discovered them, except so far as they serve to illustrate literary history.

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If these principles be applied to the different chemical systems, the outlines of which we have exhibited in the former part of this Essay, we may venture to examine them more minutely, as we have before given only a general account of the principles on which they are founded.

The doctrine first proposed by STAHL is, indeed, pregnant with too many imperfections to deserve general approbation. Phlogiston is the centre round which the whole system turns; although in the sense in which Stahl and his adherents conceived the nature of that substance, together with the properties which they attributed to it, it is, in fact, a non-entity. In former times, when chemistry was in its infancy, people were easily satisfied with such explanations: but since the objects of chemistry have been multiplied; since numberless experiments and discoveries have been successfully made, and since the diversified phenomena of nature have been more critically investigated, the imperfections of the Stahlian system have been detected, especially since chemists have been fortunate enough to trace the origin of the gaseous fluids. In consequence of these improvements, modern chemists soon discovered the many paradoxical assertions contained in Stahl's system; and endeavoured to improve and adapt it so as to render it, in some degree, applicable to later theories: and although they did not fail to transform it with art and ingenuity, so that it no longer resembled its pristine form, it nevertheless remained too unweildy, and too little consonant with nature, to claim any permanent establishment.

The phlogiston of Stahl was maintained to be an elementary combination of earth and fire, incapable of penetrating through vessels. It was affirmed, that this matter formed all combustible substances; produced light and heat in combustion, by being decomposed into its constituent parts; and lastly, that phlogiston was the basis of all metals. It was, however, found out in later times, that combustion could only take place when vital air (oxygen) had access to that process; it was clearly perceived, that this aëriform substance was diminished, and underwent a very obvious change of its nature. The chemists of the old school endeavoured to explain this phenomenon, by admitting that vital air is a substance deprived of all phlogiston, which substance had a greater affinity to phlogiston, and consequently abstracted it from bodies subjected to combustion. But, according to Stahl's idea, phlogiston should have been decomposed; fire should have escaped in the effect of sensible heat and light, and left behind the base of earth. Of this last, however, not the least trace could be discovered; on the contrary, it was observed that bodies, notwithstanding the escape of phlogiston, had actually increased in weight during combustion.

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These difficulties were insurmountable; they induced Dr. Crawford to maintain that vital air contained a great proportion of specific, or fixed elementary fire, but that it parted with this, as soon as it met with an opportunity of exchanging it for phlogiston, whereby it was changed into phlogistic air: such was the case in the process of combustion. But it was likewise inconsistent with experience, that in the combustion of phosphorus all vital air disappeared; and that no elastic fluid which could enter into combination with phlogiston, remained behind: besides, the aëriform residuum in the combustion carried on in pure vital air, was, in most instances, an aërial acid which combined with caustic lime and vegetable alkali, and had nothing of what was called phlogistic air. From whence did this arise? It was indeed maintained, that it had been present in the substance previous to its combustion, and was only disengaged during that process. But on the other hand it was found, that this aërial acid, together with the residuum of the body subjected to combustion, exceeded the former weight of that body.—In order to explain this, some natural philosophers have maintained, that phlogiston is a substance of negative specific gravity, or such as renders bodies specifically lighter, and that its point of attraction must be in that universal luminary the sun: again, others believed that vital air is virtually water, expanded by the matter of heat (caloric), which water is deposited by vital air, and imparted to bodies during combustion; a circumstance by which they endeavoured to account for the increase of weight thus occasioned.

The doctrine of Lavoisier, which exploded the existence of phlogiston, at length appeared, and excited universal attention. Former opinions were controverted, and phlogiston banished to the regions of fancy, because it could no where be exhibited to the senses; for, though it should never be incoercible, it could in no instance be discovered where it should have been separated. Thus calcined mercury was treated in close vessels, without the addition of a phlogistic body, and nevertheless was reduced to its metallic form. Whence, then, did the phlogiston proceed, and how had it combined with the calx of the metal? It was asserted that phlogiston was incoercible, and virtually fire, in a fixed state. But even granting this hypothesis, there arises another important question: why could the metal not be calcined without coming in contact with pure air, as it was not prevented from depositing its fixed fire?

In this manner the doctrine of phlogiston was involved in still greater difficulties, by which the way was paved to the system of chemistry proposed by the ingenious Lavoisier. He supported his opinions by accurate and repeated experiments, the result of which did not much vary, when repeated by other chemists, in different countries. Such was particularly

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the case with the leading opinion, that vital air deposited or imparted its elementary base to combustible bodies, increased their weight, and changed their form; this base, on account of its property of forming acids, in combination with many other bodies, he denominated oxygen. Similar proofs of the truth of Lavoisier's assertions were given in the generation of water, as well as in demonstrating other principles of the antiphlogistic system.

Those who do not acknowledge the superior advantages of this system, are actuated either by prejudice in favour of former systems, or injustice to the merits of the French. It is incomparably more perfect than that of Stahl, and it is indisputably better calculated to afford a complete and systematic theory of chemistry. The most essential particulars relative to the composition and decomposition of bodies can be satisfactorily explained, and the different phenomena accounted for upon fixed and determinate principles. Let us consider the important influence this system has produced on several of the practical sciences, which are more or less connected with chemistry. Physiology, pathology, the practice of medicine, as well as agriculture, have each of them derived considerable advantages from the illustrations of the antiphlogistic school. We may reasonably expect to be still more benefited by the researches of chemists, if they continue their efforts for the improvement of these sciences, and if physicians will devote their attention, more than they have hitherto done, in applying the principles of chemistry to the healthy as well as the diseased state of the animal body.

I shall illustrate this remark by a short digression.—The author of the criticisms on the theories of Dr. Beddoes*, as well as the great physician Hufeland, very justly observes, that in applying chemical principles to the elucidation of medical science, due attention ought always to be paid to the presence and activity of vital power in the animal body; a power which must necessarily occasion considerable deviations: and I here repeat, that this remark is well founded, as many modern practitioners have occasionally gone to such lengths, that the coolest observer who takes the trouble to examine some of their theories, cannot refrain from smiles; for instance, at the manner in which they explain muscular action. But it would be unjust to impute these errors to chemical science, as they proceed only from false theory, and an extravagant fondness in its application.

Satisfactory, however, as the system of Lavoisier appears in many points, it is, nevertheless, if examined without prejudice, not altogether free from errors

* Journal of Inventions, No. IX. to be extracted in a future Number.

errors and imperfections. Its opponents particularly object that the baſe of vital air does not deſerve the title of oxygen, as many combinations of it are far from being acids. This, indeed, cannot be denied, yet it is alſo true, that all acids hitherto known, originate from that ſource; nay, that ſome metallic calces, by a ſuperabundant communication of vital air, are changed into the ſtate of an acid; and hence it may not be improper to borrow the name of oxygen, or the acidifying principle, from that property. But if the objection be ſtill maintained, I conſider it of little importance, as the point of diſpute relates only to a term, and as terms ſerve only to repreſent the ſigns by which we render our ideas intelligible to others. The ſign itſelf, however, has no eſſential influence on the object ſignified, although it be true that each bears a cloſe relation to the other, inaſmuch as the character of the latter ought to be expreſſed, in the cleareſt poſſible manner, by means of the former. If, therefore, a more appropriate term could be contrived, to indicate the baſe of vital air, it would no doubt be adopted by every rational chemiſt, in preference to that of oxygen; but until this be done, we may be permitted to retain that term as the moſt ſuitable to the purpoſe.

The ſtrictures which have been made by others, that this oxygen cannot be exhibited in a perfectly pure ſtate, are equally unimportant. There is no ſubſtance in nature that exiſts without being combined with caloric; and how is it poſſible to exhibit a body, which, in this combination, is changed into a gaſeous ſtate, in any other form than that of gas?

But a more important objection againſt the ſtability of the antiphlogiſtic ſyſtem has been frequently ſtarted by its opponents; it relates to the defective explanation of light, and the phenomena reſulting from that element. Lavoiſier has repreſented light and heat as mere modifications of one and the ſame ſubſtance; an aſſertion which certainly cannot be maintained. Although we were to admit that light, heat, electric, nay, even magnetic matter, are modified ſubſtances, yet they are ſuch only in the hands of *nature*, and not in thoſe of the chemiſt. All theſe ſubſtances preſent themſelves to the obſerver under ſo diverſified an aſpect, and are poſſeſſed of properties ſo peculiar, that we are neceſſarily induced to conſider each of them as ſelf-ſubſiſtent, and conſequently to pay no attention to their *poſſible* modifications. In this reſpect we meet with an eſſential deficiency in the ſyſtem of Lavoiſier, who maintains that the phenomena of light and heat are only the reſults of that *condition*, under which any particular ſubſtance is diſengaged.

This inconvenience, or rather incongruity, was indeed ſoon diſcovered by ſome acute chemiſts. They admitted the preſence of two different

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ſubſtances in theſe phenomena, and aſſerted that both light and heat were united to the baſe of vital air; and that, in the proceſs of decompoſition, they were either ſeparated in a viſible form, or entered into new combinations. Many phenomena appeared to confirm the truth of this aſſertion: thus, the perfectly pellucid nitric acid again acquires its colour, and emits red fumes, when expoſed to the rays of the ſun, an effect which heat alone does not produce; thus alſo, the ſuperſaturated muriatic acid is, under ſimilar circumſtances, reduced to the ſtandard of common muriatic acid; and thus, laſtly, plants emit vital air, only when expoſed to light, but never in a contrary ſtate. In all theſe inſtances, vital air is formed, while the elementary baſe, abundantly contained in the acids before-mentioned, on account of greater affinity, fixes light and caloric, and aſſumes the gaſeous form; but by theſe means, the acids themſelves are reduced to the ſtate of imperfect oxydation. In plants, the oxygen is ſeparated from the hydrogen, with which it forms water, as ſoon as the eſſential conditions (that is, light and heat) be preſent, in which only it can be changed into vital air.

Theſe phenomena ſufficiently prove, that the theory which ſuppoſes the matter of light to paſs into oxygenous gas, is far from being a vague hypotheſis, while they bear ſtrong evidence of the actual preſence of that ſubſtance in the gas. If this propoſition be once admitted, it will not be difficult to explain all the phenomena of combuſtion, upon the principles of the antiphlogiſtic ſyſtem.

There can be only one opinion among chemiſts, that oxygen is indiſpenſibly neceſſary in every proceſs of true combuſtion; but we ſhould meet with inſurmountable difficulties in explaining the phenomena of radiant heat, of lightning, or of mere heat, if, in oxygen gas, thoſe ſubſtances were contained which, in a diſengaged ſtate, produced theſe phenomena, accordingly as they operate, individually or united.

By this modification, therefore, the apparent inconſiſtency of the ſyſtem of Lavoiſier may be eaſily reconciled, and all objections effectually obviated. It further adds to the ſatisfaction the philoſophic inquirer derives from comparative reſearches, that the modification before detailed, in its principal points, agrees in a ſtriking manner with the ſyſtem of the two German chemiſts, Gren and Richter.

The chief point on which the latter ſyſtem reſts, and by which it appears to be diſtinguiſhed from the antiphlogiſtic, is the doctrine reſpecting the exiſtence of the matter of light in combuſtible bodies. But, upon attentively conſidering the ſyſtem of the French philoſopher, we ſhall find, that the difference is neither eſſential nor founded in reality.

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The two chemiſts before-mentioned were, in fact, the firſt who repreſented the doctrine of this ſyſtem relative to the matter of light, in its full extent; a ſubject which the antiphlogiſtians themſelves had hitherto left undetermined.

The matter of light, however, as well as that of heat, is an incoercible ſubſtance, which, being diffuſed through the univerſe, is, like every other ſubſtance, ſubject to the laws of chemical affinity; conſequently, this matter alſo, like that of heat, is capable of entering into combinations with all ſubſtances exiſting in nature. Is it, therefore, not perfectly conſiſtent that theſe natural bodies, as ſoon as there ſubſiſts between them and oxygen a ſtronger degree of affinity than between them and the matter of light, ſhould enter into combination with the former; and that if the product ariſing from this combination manifeſt either a very ſlight degree of, or no attraction at all, for the latter (that is, when the body combining with oxygen is of a combuſtible nature), they part, under certain conditions, with *their* matter of light, which in this caſe eſcapes, together with *that* of the oxygen, either alone, or conjointly with its caloric, becomes manifeſt to the ſenſes, or forms new combinations. Thus ariſe the different degrees of combuſtion, both in point of violence and duration, accordingly as the quantity and modification of the incoercible ſubſtances (the matters of light and heat), diſengaged from oxygen, as well as from the combuſtible body, are different in their nature.

This is a pure principle of the antiphlogiſtic ſyſtem, although it has not been hitherto expreſſed in that form by the French chemiſts. The idea which, in their ſyſtem, is connected with the term *lumiere* (matter of light), and the parallel in which this laſt ſtands with the matter of heat, is an inconteſtible proof of the preceding aſſertion. I believe that no friend of that ſyſtem will be ſo groſsly inconſiſtent, as to deviate from this explanation, or to maintain, that oxygen is the *only* ſubſtance capable of fixing and receiving light.

The changes which ſeveral ſubſtances undergo, when expoſed to light; as, for inſtance, the muriat of ſilver, the ſolution of iron in vitriolic ether, &c. are ſufficient evidence of its influence and fixation. But ſtill more concluſive, in this reſpect, are the experiments which have lately been made by the Dutch chemiſts, and which deſerve every attention, as the facts thereby eſtabliſhed have long been known, although little attention has hitherto been paid to them. Theſe intereſting experiments relate to the generation of flame, in mixing melted ſulphur with metals. This flame, which, ſo far from being the reſult of true combuſtion, is, according to the more appropriate term of Van Mons, rather that of ignition, or, as I would expreſs it, of inflammation, very probably ariſes from the circumſtance, that a part of the ſpecific matter of light contained

tained in ſulphur and the metals, is ſeparated; becauſe the union thence ariſing, or the ſulphurated metal, poſſeſſes a leſs capacity for this elementary matter than both ſubſtances, jointly conſtituting the product, poſſeſs in a ſeparate ſtate.

That oxygen can have no ſhare in that inflammation is obvious, becauſe this phenomenon not only takes place in other ſpecies of gas, incapable of ſupporting the combuſtion of bodies, ſuch as the hydrogen, and carbonic acid gas, but likewiſe in a vacuum; beſides which, the preceding aſſertion is principally ſupported by the fact, that the combination thence reſulting is not a ſulphureo-acid, but a ſulphurated metal.

Dr. Richter, indeed, explains this phenomenon in a different manner, and accounts for it by the decompoſition of a ſmall portion of water, adhering to ſulphur (be it ever ſo well dried); a conjecture to which he is led by obſerving, that a ſlight trace of ſulphuric acid is generated in the proceſs. It does not, however, appear that the ſmall quantity of oxygen diſengaged ſufficiently accounts for the origin of the phenomenon, inaſmuch as this element, though contributing its ſhare to produce the phenomenon, ſeems to be altogether ineſſential.

If, therefore, we admit the preſence of the matter of light in all natural bodies, if it be granted, which cannot, indeed, be denied, that this ſubſtance is more or leſs, either ſingly, or combined with others, diſengaged in the chemical change of bodies, and thus produces the phenomenon of light, we are at once enabled to explain, in a conſiſtent manner, and with a degree of probability, all the phenomena in which light has any ſhare.

Whether we adopt the idea of Dr. Richter, that light is a compound body, or whether we believe with Profeſſor Göettling, that light is a ſimple element in a free ſtate, is in my opinion of no importance. Both conjectures admit of unequivocal proofs, and both explain the phenomena in an eaſy and ſatisfactory manner.

Notwithſtanding theſe conceſſions, we cannot pay implicit reſpect to the different theorems laid down in the ſyſtem of Profeſſor Göettling, as they are liable to many material objections, which have been already made to them by ſeveral chemiſts. The principal points in which this ſyſtem differs from the antiphlogiſtic ſyſtem of the French, or that of Richter, the non-exiſtence of azote, and the opinion that the baſe of nitre, or azotic gas, is a combination of oxygen and azote, have not been at all proved.

The experiments which induced Göettling to maintain this opinion, have been frequently repeated by Iſelin, Lind, Jaeger, and Scherer, but have not proved in any degree ſatisfactory.

SCHERER in particular has, by a repetition of theſe experiments, and the addition of ſeveral others, given the moſt deciſive proofs of his ſkill in chemiſtry, and afforded the greateſt accuracy of which the ſcience is capable: he has proved that phoſphorus neither emits light in *pure* azotic gas, nor is changed into an acid; but that theſe phenomena happen only when the azotic gas employed in the experiment, contains a portion of oxygen: for, when he procured azotic gas by expoſing phoſphorus in atmoſpheric air to the influence of red-hot-coals, for the ſpace of an hour, he obſerved that the phoſphorus incorporated with the air, remained unchanged, and that the emiſſion of light did not take place. Mr. Göettling indeed objected, that the azotic gas thus prepared, contained phoſphorus in ſolution, and was thereby prevented from decompoſing the phoſphorus incorporated with it. This objection, however, is of no weight, if we admit the principle, that the greater the ſurface of the body is which is to be decompoſed, the eaſier will the body, which is to decompoſe it, operate.

At preſent, therefore, the theory of Göettling is not firmly eſtabliſhed, many important points ſtill remaining in doubt. Whether theſe doubts will ever be removed, time muſt determine: till they are, we may be permitted to adhere to that ſyſtem which appears moſt conſiſtent and ſatisfactory.

G. R. FRANK.

On the practical Study of Botany, by means of Chemical Analyſis:—Chiefly abridged from the Original Papers of Dr. T. S. HERMBSTAEDT, *&c.*

[Continued from Number III. p. 263 to 269.]

BEFORE we proceed in the chemical analyſis of vegetable bodies, it will be neceſſary to exhibit a table of their various acid and ſaline ingredients.

A. Eſſential acid ſalts.

a. The tartaric acid.

b. The oxalic acid.

B. Neutral ſalts.

a. The ſulphat of potaſs.

b. The nitrat of potaſs.

c. The muriat of potaſs.

d. The tartarite of potaſs.

e. The malat of potaſs.

f. The oxalite of potaſs.

g. The ſulphat of ſoda.

h. The muriat of ſoda.

i. The tartarite of volatile alkali, or ammonia.

C. Semi-ſalts (ſalia media).

a. The malat of lime.

b. The tartarite of lime.

c. The oxalite of lime.

Beſides theſe different ſaline ſubſtances, there exiſts in all vegetables an inert matter, poſſeſſing no peculiar qualities, and conſtituting the greateſt proportion in almoſt every vegetable body. This fibrous matter is the reſiduum of plants, after frequent boiling in water, and after all the other parts have been extracted. It will be readily conjectured, that we here allude to the *vegetable fibre*, conſiſting of thoſe canals and capillary tubes in which the various conſtituent parts were preſerved previous to their extraction. Upon reducing this fibre by the action of fire, in a pneumato-chemical apparatus, we obtain hydrogen gas (inflammable air), carbonic acid gas (fixed air), and carbonate of lime (carbon), from which laſt, by means of combuſtion in atmoſpheric air, the baſe of carbon eſcapes, and calcareous earth alone remains behind.

We have now treated of the different elementary conſtituents of vegetables, which are eſſentially diſtinct from each other, without enumerating the almoſt endleſs ſubdiviſions and modifications to which the acids, the eſſential acid ſalts, and the neutral and ſemi-ſalts, are ſtill ſubject. The number of them is certainly very conſiderable; for which reaſon, greater accuracy of obſervation, and more indefatigable exertion, will be required in the analytical proceſs, than have hitherto been beſtowed upon it. Notwithſtanding every attempt to leſſen the great number of theſe conſtituent parts, we cannot exclude any one without treſpaſſing upon the eſtabliſhed laws of nature. But on the other hand, the advantages which a chemical analyſis, conducted upon theſe principles, promiſes to the enquirer, are ſo extenſive, that they will amply reward the labours, which the medical and philoſophic chemiſt may beſtow on this faſcinating and profitable purſuit.

After this neceſſary digreſſion, we ſhall return to the ſubject of experimental analyſis, and only obſerve, with reſpect to the combination ſubſiſting between the tartaric acid and potaſs, that this compound is met with in many vegetable bodies, ſometimes in a ſtate of ſaturation, and ſometimes in a ſtate where the acid predominates. Theſe ſalts are chiefly diſcoverable by the circumſtance, that, on red-hot coals, they emit the ſmell of burnt tartar, and leave behind a reſiduum conſiſting of an alkaline carbon.—The oxalic ſalts may alſo be readily diſcovered, by precipitating a ſolution

a solution of them in common spring water; and by the acid vapours they emit, if exposed to the action of ignited coals.

The neutral and semi-saline combination before specified, are not unfrequently found as formative or elementary parts in vegetables: their respective physical properties, however, need not be detailed in this place, as the student will readily obtain this part of botanical and medical knowledge from almost every introductory work on chemistry and pharmacy. In order to enable the reader to undertake a complete chemical analysis of vegetables, founded upon general principles, it would be necessary to give a detailed description of the different principles, or elementary constituents, of vegetable organization, each in their separate original state, affording, at the same time, an accurate characteristic of every external, as well as chemical criterion, to prevent any ambiguity or confusion. This the author of the present essay could not undertake, in the limited compass allotted to the inquiry; but he has pledged himself to bestow the requisite time and labour on the composition of a work, which may serve as an elementary code, exclusively devoted to the subject of botanical analysis.

Having premised these observations, we resume the practical part of the treatise:—

Neutral Salts, and Vegetable Acid Salts.

In examining these substances, we ought to proceed in different ways, according as we have opportunities of employing fresh or dried vegetable matter. The whole difference, however, merely depends upon this circumstance, that in the former case it is not necessary to make a decoction of the plants, but only to analyse the newly-expressed sap: and that if dry substances be used, a saturated decoction of them should be prepared in distilled water; with which we may perform the analytical process in the manner following:

1st. Let a slip of litmus paper be suspended in a portion of such decoction; and let another portion of it be mixed with the carbonated potash (in a dry and crystallized state): if, after some time, the paper become of a red colour, and, upon the addition of an alkaline salt, an effervescence take place, these are undoubted proofs that certain free acids, which are of a vegetable, and not of a mineral nature, are contained in the vegetables. In order to investigate the properties of these vegetable acids, we should proceed in the manner following:

2dly. Let a portion of the decoction before mentioned be diluted with distilled water, and a few drops of the solution of lime in the muriatic acid be added to the mixture. If, after some hours, or even immediately, a preci-

precipitate ſhould be formed, and if the ſubſtance thus precipitated ſhould be again ſoluble by adding a few drops of nitrous acid, it is then evident that the plant affords free oxalic acid, from which we may infer the preſence of the eſſential ſalt of ſorrel.

3d. But if, in the preceding experiment, no precipitation ſhould take place, another portion of the decoction, previouſly diluted with a ſmall quantity of the ſolution of lead in the acetic acid, may be employed. Should then a precipitate be formed, which is again ſoluble upon the addition of a ſmall portion of nitric acid, it is manifeſt, that the vegetable under experiment contains not only free tartaric acid, but that it will yield real tartar.*

As, beſides theſe ingredients, there are alſo to be met with, in vegetables, a variety of neutral ſalts, which contain ammonia, or even potaſs, combined with ſulphuric, muriatic, or nitric acid, their exiſtence ought likewiſe to be aſcertained by chemical analyſis.

4thly. In order to diſcover the ammoniacal neutral ſalts, the decoction of vegetable ſubſtances muſt be inſpiſſated to the conſiſtence of a ſyrup, and, while yet warm, mixed with a third part (of its own weight) of the dry cauſtic potaſs. Upon holding a little wooden ſtick, moiſtened in concentrated acetic acid, over this mixture, viſible white vapours will riſe, if it really contain an ammoniacal neutral ſalt; but unleſs that be the caſe, no ſuch vapours will appear.

5thly. The ſulphurated neutral ſalts may be diſcovered by diluting the uſual decoction with diſtilled water, and adding to it a little of the ſolution of barytes or the acetic acid. If it be impregnated with ſulphuric acid, a precipitation will be the conſequence.

6thly. The muriatic neutral ſalt may be diſcovered in a ſimilar manner, by adding to the mixture a few drops of a ſolution of ſilver in the ſulphuric acid, which, if it produce a precipitate, will infallibly ſhew the preſence of muriatic acid.

7thly. The exiſtence of nitre in vegetable bodies may be aſcertained in two different ways: either by evaporating a few ounces of the decoction to dryneſs, and afterwards burning the ſubſtance ſo dried in a ſmall crucible, when,

* If by the proceſſes here detailed, a free acid cannot be obtained, either by means of the potaſs or litmus paper, and the decoction nevertheleſs affords precipitates with the reagents before enumerated: and if the matters precipitated agree in their affinity with those already deſcribed, we may reaſonably conclude, that perfectly neutral ſalts are preſent, which have the acids above ſpecified for their baſes.

when, if nitre be an ingredient, a ſlight detonation will ſhew its preſence: or by mixing a part of the decoction with the fourth part of a mixture, conſiſting of equal parts of alcohol and concentrated ſulphuric acid; which compound ſhould ſtand four and twenty hours in a bottle, ſecured with a glaſs ſtopper. Should nitre be contained in it, the mixture, on opening the bottle, will emit the ſmell of dulcified nitric acid.

If we wiſh to aſcertain the exiſtence of neutral ſalts and vegetable acid ſalts in vegetable ſubſtances, in a recent ſtate, the labours of the inquirer will neither be ſo complicated nor fatiguing as in a dry ſtate. It requires little more than to reduce the plants, or other vegetable productions, to the conſiſtence of a pulp, in a ſtone mortar, to expreſs the juice by means of proper machines, and, after having allowed it to ſtand for ſome hours, to paſs it through a filter. Thus prepared, it may be analyſed, firſt, by immerſing in it litmus paper, or adding to it the proportion of carbonated potaſs before ſtated. In order to aſcertain the preſence of free acids in general, and to diſcover the nature and properties of the particular acids, as well as of the neutral ſalts contained in the juice of ſuch vegetables, the different proceſſes already pointed out may be employed in their fulleſt extent.

(To be reſumed in our next Number.)

Abſtract of the Theory of Puerperal Fever; from a Letter communicated to the Editors of the American Medical Repoſitory: By Dr. JOHN BRICKELL, *of Savannah.*

THE author of this ingenious letter prefaces his new theory of child-bed fever, with the following remark:

"During my courſe of anatomical ſtudies, which continued ſeveral years, I had ſome valuable opportunities of diſſecting women who died of puerperal fever; and, upon peruſing treatiſes written expreſſly on this ſubject by the Britiſh phyſicians, *Denman, Leake, Hulme, White,* and *Young,* I readily perceived ſuch a mixture of truth, error, and miſapprehenſion, as convinced me that they had examined this buſineſs too ſlightly, and raſhly made up their opinions from partial and defective premiſes;" &c.

After having, rather ſeverely, animadverted upon ſome particular parts of theſe theories, and furniſhed us with a new hypotheſis relative to the mechaniſm of child-birth, maintained upon ſtatic and mathematical principles,* the author thus proceeds in drawing the *practical inference* from his reaſonings:

"From

* The particulars of this theory we propoſe to give in our next.

"From what has been ſaid, it is evident, that the blood is the great inſtrument (cauſe) of danger, from its *exceſs* in the abdomen, and its *defect* in the head; its exceſs producing fatal inflammation and fever, and its defect producing ſyncope and ſpaſms, that ſometimes carry off the patient ſoon after delivery; our great attention, therefore, ought to be directed to the regulation of its motions, ſo as to detach from the abdomen the ſuper-abundance, and leſſen its momentum there; and to reſtore to the brain the quantity diverted from it, and which is neceſſary to remove its collapſe, and re-eſtabliſh the libration of the nervous ſyſtem.

"For this purpoſe, a broad bandage or two may be placed under the woman, ready to be properly tightened over a ſmall pillow on the abdomen, as ſoon as delivery is effected; to ſerve as an artificial preſſure and reſtraint on the influx of the blood (inſtead of the uterine preſſure before the birth), and the abdomen ought to be elevated above the horizon, and the head depreſſed, that the velocity of the blood may be checked by its gravity, and its return to the head accelerated by the ſame cauſe. If cordials be given before this, the heart will be ſtimulated to act with more vigour, the abdomen will be more filled with blood, and the head more emptied; and ſo the danger increaſed.

"Should entiritis, peritonitis, epiploitis, or any other inflammation, enſue, I apply the antiphlogiſtic means; but with reſerve, on account of the natural diſcharges. I ſometimes draw blood from the arm; and, in caſes of extreme violence, I have repeated this operation three times in one day, with the happieſt effects.

"I once diſſected a woman who died of a moſt violent puerperal fever. The whole ſurface of the peritonæum, ſtrictly ſo called, as well as the parts of it which give the exterior coats to the inteſtines, uterus, bladder, &c. had, with other marks of high inflammation, a coat of pus, like that obſerved in the corner of an inflamed eye, and as thick as broad cloth.

"As I write for men, I do not find it neceſſary to repeat the particulars to be found in every practical treatiſe: my principal aim being to eſtabliſh a juſt theory, which muſt be productive of a reaſonable practice."

HINTS

HINTS AND IMPROVEMENTS

IN THE PRACTICE OF

MEDICINE AND SURGERY.

ON the ſubject of *Digitalis in the Cure of Conſumption,* as mentioned in our laſt, p. 289, & ſeq. we extract the following intereſting paſſages, from a letter of a Correſpondent, dated Enfield, May 6th, 1799.

"I have had opportunities of obſerving effects, both ſalutary and injurious, very much reſembling thoſe of digitalis, in a ſtrong decoction of *green broom,* when drank in large quantities, which is, I believe, well known to be an efficacious remedy for *dropſy,* particularly *anaſarca:* and hence it may not be unreaſonable to infer, that this plant may afford one inſtance of an analogous, ſafer, and more manageable remedy, in the treatment of conſumption.

"I was further informed, about five years ſince, that an empirical practitioner, who had acquired wealth and reputation by curing conſumptions which had been given over by the faculty, made uſe of the juice of the lakeweed, or *ranunculus aquaticus,* both as an emetic, and (in nauſeating doſes) as an alterative. His patients were ordered to drink a pint or more of water gruel, previous to the exhibition of the juice, and then to ſwallow one ounce, or even two ounces. It generally operates expeditiouſly; but at all events, the patient was deſired to continue drinking water gruel, at intervals, till it did operate. The gruel previouſly drank was intended to prevent the acrid property of the ranunculus on the coats of the ſtomach.

"There is a very remarkable circumſtance attending the expreſſed juice of this plant, that it may be preſerved many years, without becoming mouldy, or undergoing any material change. I have three quarts of it now by me, which have ſtood on a ſhelf, in an open laboratory, four or five years, in common quart bottles—it has the ſmell of ſweet-wort, and is quite pure."

Our correſpondent concludes with expreſſing a wiſh, that theſe circumſtances may induce practitioners to pay ſome attention to the ranunculus aquaticus, as an herb analogous in ſome of its properties to the digitalis. As, however, we have already declared our ſentiments on this ſubject, we ſhall at preſent only refer the reader to the 292d page of the preceding Number.

As

As connected with the preceding subject, we shall here also extract some characteristic passages from a publication which has recently appeared, entitled, "*An Essay on Consumption,*" by Dr. BEDDOES. After having informed us that his own experience has fully verified the observations of Drs. Drake and Fowler (the substance of which we have given in our preceding Number, pp. 290—294), he proceeds in the following words:

"I daily see many patients in pulmonary consumption advancing towards recovery with so firm a pace, that, I hope, consumption will henceforward as *regularly* be cured by the *fox-glove*, as ague by the Peruvian bark. Could we obtain a single *auxiliary* for fox-glove, such as we have in many instances for the bark, I should expect that not one case in five would terminate as ninety-nine in an hundred have hitherto terminated. But I believe a majority of cases will yield to simple fox-glove. It is evident that no new cases need be suffered to advance beyond the first stage, without the application of this medicine, and few into it."—p. 270 and foll.

Disclaiming any share *in this most beneficial discovery*, Dr. B. says:

"*The least considerate must perceive, that if the subsequent harvest correspond to the first fruits, there is a cause for* NATIONAL REJOICING, *greater and more universal than has ever before occurred.*"—p. 271 and foll.

Dr. SEBIG, a German practitioner, has lately published in '*Hufeland's Journal of the Practice of Medicine,*' No. I. of Vol. VII. some recent and successful experiments made with a species of *fennel* (*wasser-fenchel*) in the cure of *Consumption*, accompanied with further remarks on the same subject, by the editor:—in a future Number we shall communicate to our readers the result of these trials.

On the most effectual Remedies in Rheumatic Affections.

THERE are rheumatic epidemics, in which the diseases, although they derive their origin from the same source, exhibit so different and diversified a form, that it requires the sagacity of a very attentive observer, to discover their common origin, their corresponding nature, and consequently to ascertain the most accurate indications of cure.

Upon the whole, it deserves to be remarked, that the effect of the translated rheumatic matter (*metastasis*) may be extremely different, according as it is of an acrid, inflammatory, or phlegmatic nature; according to the constitution of the whole body, and the individual condition of the part affected. This matter, or humour (for what else can it be called by the nervous and chemical pathologist?) generally settles on that internal part of

of the body, which has previously been weakened, either naturally, or by disease, or by other accidental circumstances. Hence we find that rheumatism principally attacks such external parts as have been in a certain degree debilitated by contusions, wounds, ruptures, dislocations, sprains, &c. Hence also it happens, that such individuals are sensible of every change of the atmosphere which affects those parts, and which, as it is ludicrously said, converts their bodies into living barometers. To the same or similar causes it must be ascribed, that in certain anomalous fevers the diseased matter sometimes settles on those parts which formerly were subject to rheumatisms or erysipelatous affections, and that the period of the disease is in this manner determined: such, therefore, may be aptly called critical rheumatisms.

The most effectual method pursued in the cure of chronic rheumatism, whether arising from a venereal taint in the constitution, or other causes, is that recommended by Professor CERILLO, of Naples. It principally consists of the following simple mercurial ointment, half a drachm of which is to be rubbed in, on the sole or so es of the feet, every evening previous to going to bed:

R. *Merc. subl. subtiliss. pulv. drachm* i.
Axung. porc. Unc. i.
Teratur. per hor. un. et dimid ut f. Unguent.

The efficacy of this remedy we find recorded in the '*Journal de Medicine.*' tom. LIX; in Dr. *Richter's Chirurgical Library* (in German), published at Gottingen: Vol. VII. p. 507, and 508.

According to the accounts given by Drs. CHEYNE and HOME, a mixture consisting of two drachms of spirit of *turpentine* and one ounce of honey, two tea-spoonfuls of which were taken every morning and evening, had an uncommon effect in promoting the discharge of urine, and relieving, in a few days, a patient who had been afflicted for near a twelvemonth, with that species of rheumatism termed *ischias*.—But Dr. VOGEL, of Rostock, an eminent writer and practitioner, observes, that turpentine will relieve only that particular kind of pain before alluded to, and be of no avail in any other species of rheumatic affection. Nor does it always operate as a diuretic, and yet afford relief: sometimes however it is attended with no beneficial effects. He further remarks, that the extract of the *aconitum*, with the proper addition of *camphor*, in progressive doses, have *uniformly* proved successful in Germany; and that Dr. HERZ, a respectable physician of Berlin, in one case, increased the dose of the *aconitum*, *even to half a drachm!* a case which almost terminated fatally; hence the necessity of

attending to a certain *maximum* for a dose, which ought never to be exceeded, without the greatest precaution.

In the *nervous* ischias, another foreign practitioner, Mr. TRAMPEL, strongly recommends the use of pills made of *sulph. antim. aur.* and *extr. opii*, in due proportions, to be increased to such a dose as the patient can conveniently bear, and to be continued until all the pains have subsided.

Another very remarkable and instructive observation relative to the treatment of rheumatism we cannot withhold from our readers, as it is registered in '*Vogel's Practical Manual*,' second edit. (in German) Vol. III. p. 447; and in '*Baldinger's New Magazine*', Vol. X. No. 2. p. 170.—Singular as it may appear to the superficial observer, it cannot be denied that the following process is founded on the established laws of the animal economy. It merely consists in gently beating the painful part of the hip or loins with a thin piece of whalebone, regularly several times a day, and immediately after it, covering the thigh afflicted, with bags containing warm sand. This remedy is originally derived from an ingenious interpretation of a passage in Suetonius, according to whom, the Emperor Augustus was relieved *(remedio arenarum atque arundinum)* in a similar manner.

The most important and satisfactory authors who have treated on this disease are the following:—*Ballonius; Riviere; Morgagni*, L. IV. Ep. 57; *Huxham; Sydenham*, Sect. VI. Cap. V.; *Stöerck*, Ann ii; *De Haen*, Tom. IV. Cap. 4; *Van Swieten*, Tom. V; *Sarcone; Pringle; Monro; Brocklesby; Home; Baldinger; Macbride; R. E. Vogel; S. G. Vogel; Cullen; Clark; Tissot; Corrunni; Sims;* and particularly *Stoll*, in his "*Ratio medendi*," Part III, in the chapter entitled '*De Natura et Indole Dysenteriæ*.'

On Puerperal Fever, and its Treatment.

We have already, in a preceding article of this Number, p. 381, communicated to our readers the new theory on this subject, proposed by Dr. Brickell, of Savannah: in the present paper we shall give a concise account of the various modern opinions as well as methods of treatment lately adopted by practitioners in various parts of Europe.

Professor WALTER, of Berlin, maintains, that in a great number of dissections of the bodies of persons who had fallen victims to the puerperal fever, he has *never* observed an inflammation of the uterus, unless it had taken place in consequence of an unsuccessful operation of the accoucheur. He also believes, with the celebrated HUNTER, that the peritonæum is in a state of inflammation, and hence accounts for the suffusion of purulent matter over the intestines.

DE

De La Roche, a French author, conſiders an inflammation of the inteſtines as the proximate cauſe of the child-bed fever; but this theory is certainly unfounded, and has been completely refuted by various writers, particularly the Reviewer of De la Roche's book in the Univerſal German Library, Vol. LXVIII. p. 123, &c.

Profeſſor Soemmering, as well as Profeſſor Stein, of Caſſel, have frequently obſerved in diſſection, that the inteſtines of the bodies of women who had died of the puerperal fever, were covered with a purulent or caſeous matter, ſimilar to that noticed by Walter and Hunter; but the former of theſe anatomiſts, perhaps with ſome degree of injuſtice, treats as a ludicrous idea, what others have called in this fever, a metaſtaſis of the milk.

The aggregate of theſe differences of opinion has lately been definitively ſettled in Profeſſor *Selle's* "*New Contributions to Phyſical and Medical Knowledge*" (in German), Part III. p. 92; in which this learned author has proved by incontrovertible facts: "That the diſeaſe originates in an accumulation of corrupted humours in the abdomen, which humours have either been already ſeparated in the form of milk, or intended by nature to be ſo. The cauſes of this accumulation may be various, but are principally an epidemic miaſma, paſſions, ſudden cold, and inflammation. In corroboration of Profeſſor Selle's theory, Dr. Hermbſtädt has proved by chemical experiments, that the fluid matter found in the cavities of the abdomen was *virtually milk*. It deſerves however to be remarked, that the fat of the omentum and the meſentery, being diſſolved by the febrile heat, may combine with the extravaſated lymph; ſo as to produce a fluid of a more or leſs viſcid conſiſtence, and reſembling milk in its external characters.

Almoſt all the French writers, *Le Roy, Puzos, Levret, Deleurye, Paulet, Doulcet, Doublet,* as well as *Boerhaave,* and partly alſo *Van Swieten, Gruner, Fuchs,* and many others, conſider the metaſtaſis of the milk as the leading cauſe of the childbed fever. But it will appear from the following conſiderations, which are confirmed by daily experience, that the milk is altogether unconnected with the diſeaſe: 1, That lying-in women who ſuckle their own children, and have an abundant portion of milk in their breaſts, are not exempt from the attacks of the fever; 2, That although the milk be ſcanty or deficient, ſometimes neither fever nor any other diſtreſſing ſymptom will be the conſequence; 3. That the fever with all its concomitant ſymptoms has frequently prevailed for ſeveral days, before the milk diſappeared; 4, That the breaſts in many caſes remain filled with milk to the laſt ſtage of the fever; and 5, That in a variety of caſes, after diſſection,

tion, no traces of a metastasis of milk could be discovered. If therefore, such metastases really occur in puerperal fever, as have been frequently observed and sufficiently demonstrated by accurate practitioners, it ought to be determined in what condition they stand with the fever. Upon the whole, they are to be considered as *symptomatic* only, and not *pathognomic*.

We have been perhaps more diffuse, in stating the different opinions that have hitherto prevailed respecting the material cause of puerperal fever, than is strictly consistent with this department of our Journal; but as false theories frequently lead to false practice, we thought ourselves justified in extending the limits of this article.

With respect to the method of cure in this fever, we shall premise one very important rule, not to attack the disease with violent remedies, but to employ those of the mildest kind, so that the attempts of the physician may not do more mischief than the disease. This remark particularly relates to evacuants, although the principal indications of cure ought not, on that account to be neglected: hence all acrid and stimulating remedies should either be avoided, or at least covered in emulsions, gum arabic, and the like, that they may fulfil the intention, without exciting too violent a commotion in the irritable body of the patient.

Phlebotomy should not be resorted to, without the most pressing necessity. Let every thing be carefully avoided that can in any degree disturb the tranquillity either of mind or body. With respect to the debility accompanying this fever, a due distinction ought always to be made between hysteric weakness, and that arising from want of vital energy; and the practitioner should not be too timid in removing, as speedily as the strength of the patient and other circumstances will admit, any material cause which can be discovered, and may prove a powerful stimulus to the nervous system: for a few drops of acrid bile, or rancid mucus, may be productive of the most dreadful consequences. Hence the necessity of employing evacuants, with a steady and skilful hand; and to support the patient occasionally with other appropriate medicines, such as the castoreum, assafœtida, valerian, &c. as may best agree with her general state.

The sudorific remedies, as well as camphor, blisters, the warm bath, opium, bark, &c. which, in this fever, are frequently prescribed in a very empirical and indiscriminate manner, are each of them useful in proper time and situation, but none of them at all times, and in all cases.

A remarkable instance of the prevention of this disease occurred in the hospital at Lyons, where, according to POUTEAU's method, two or three emetics

emetics are regularly adminiſtered to women during their pregnancy, inſtead of bleeding them; and this precautionary ſtep is attended with ſuch happy effects, that ſince its firſt introduction, the caſes of puerpera fever, or other diſeaſes peculiar to lying-in women, have become extremely rare. Indeed ſuch a fever, ſince that period, is there ſcarcely known by name, and its having proved mortal is a thing quite unheard of. Vide '*Richter's Chirurgical Library*' (in German), vol. viii. p. 75.

The beſt modern writers on this ſubject are, *Strother, Hulme, Leake, White, Kirkland, Butter, Denman, Hunter, Manning, Miller, Aikin, Johnſtone, Stoll, Home, Gruner, Fuchs, Selle, Burſerius, Doublet, Delaroche, Smellie, Oſiander, Reil, Walſh, Clarke, Ratzki, Kauhlen, Thilenius, Nolte, Zehner,* &c. &c.

On the Medicinal Properties of Iron.

Cit. Mandel, profeſſor of pharmacy and therapeutics at Nancy, member of the central jury of public inſtruction, has, in a late diſſertation upon iron, endeavoured to explain the different neutral ſtates in which it is found, as well as thoſe to which it can be converted by art; the advantages derived from its magnetic property, particularly by the diſcovery of the compaſs; and its quality of attracting and conducting the electric fluid diſengaged in lightning: he further attempts to demonſtrate the affinity ſubſiſting between that metal and oxygen, from the facility with which it forms combinations with ſaline ſubſtances; from its ready oxydation by air and water, and its ſolution in this laſt ſubſtance, which is decompoſed by it.

He then paſſes to the action of iron on the animal economy; the cures which it ſometimes ſpeedily performs, and on the other hand, the accidents it is apt to occaſion in certain individuals, even when given in ſmall doſes. This circumſtance tends to determine a very intereſting queſtion, namely, whether the iron which exiſts in ſubſtance and in form in our humours, particularly in the blood, may not be conſidered, on account of its natural increaſe or diminution, as the cauſe of many diſeaſes? He mentions *chloroſis*, as one which leads to a ſatisfactory reſult.

He explains the recent ſyſtem of Dr. Rollo, who maintains that the greater or leſs quantity of oxygen in the blood is the cauſe of ſeveral diſorders. Without overturning this principle, he oppoſes the author's application of it to certain diſeaſes, particularly chloroſis, which, he ſays, is determined by the ſmalleſt quantity of oxygen, and againſt which he recommends the metallic oxyds, as the moſt proper to furniſh the oxygen. He, on the contrary, proves that this diſeaſe is ſubdued by medicines

calculated to leſſen the quantity of oxygen, rather than increaſe it; that it is cured by iron which has undergone no preparation, but the minuteſt diviſion of its particles; whence he concludes that we ought not to conſider *oxygenation*, but rather *ferrugination*, as the efficient cauſe of cure.

The author next ſettles the nomenclature of different diſorders in which iron, or various preparations of it, ought to be adminiſtered; he points out thoſe in which it is reſpectively indicated, as far as relates to the nature and ſtate of each.

Laſtly, he examines, whether the *magnet* ſhould be admitted in the liſt of medical remedies, and enumerates the different ſyſtems, both of the advocates of this mineral and its opponents: he combats, from experience, the opinion of the latter, who nevertheleſs admit deleterious ſubſtances; he ſhews that it is at leaſt doubtful, whether the iron contained in the blood be not attracted by the magnet; and, without admitting the truth of all the wonders attributed to it, and at the ſame time making allowances for the extravagance of the praiſes laviſhed on it, he is of opinion that it ought to be preſerved among the number of medicinal remedies.

We have purpoſely extracted this imperfect account from the xxviith Number of the 'Recueil Periodique de la Société de Médecine de Paris;' to give our readers a ſpecimen of the manner in which articles of a practical tendency are generally treated in foreign Journals. Not a word of the doſes, or particular caſes, in which either the *iron* or the *magnet* can be adminiſtered with ſafety! In a future Number of this Journal, we propoſe to reſume this ſubject, and to ſupply theſe deficiencies.

On bleeding Children afflicted with a large Head.

In the firſt volume of the Memoirs publiſhed by the National Inſtitute of France, we met with an intereſting Eſſay of Cit. Desessartz, "*On the advantages and neceſſity of taking but little blood at a time, from children afflicted with a large head.*" This memoir is avowedly the reſult of numerous obſervations, from which the author has ſelected two, as the moſt deciſive. Theſe, as well as the general tenor of the work, tend to ſhew:

1. That children with large heads, that is to ſay, thoſe in whom that part of the body is of a greater ſize than is conſiſtent with a ſound ſtate of health, or the juſt proportions of nature, have the leaſt energy, and are moſt ſubject to convulſions.

2. That taking half a cup-full (palette) of blood, from the age of ſix months to a year; a cup-full and a half, or two cups-full, from the age of one

one to ſix years, are too copious; and that topical bleeding by means of leeches may be ſubſtituted with advantage, producing a more gradual, and leſs debilitating evacuation; and,

3. That ſuitable drinks, bathings, and above all emollient fomentations of the belly may be employed with great ſucceſs as auxiliaries.

Cit. Deſeſſartz conſiders theſe means united to be the foundation of the proper treatment of many other diſeaſes of ſuch children as have preternaturally large heads. Reſpecting theſe, and indeed children in general, the aphoriſm of Hippocrates, on the facility of accompliſhing a criſis, is verified, when the phyſician has been fortunate enough to overcome the firſt obſtacles, and thus to prevent the regular developement of the phenomena exhibited by the diſeaſe.

On the Propriety of performing the Cæſarean Operation.

THE Medical Society of Paris, after having heard the Memoir of Citizen BAUDELOCQUE, on the Cæſarean Section, read twice, together with the intereſting diſcuſſion it has produced; and conſidering,

1. That it is proved by experience, that there are caſes in which delivery is impoſſible by natural means;

2. That, in a number of caſes, the Cæſarean Operation is the only means which affords any hope of ſaving the life of the child; and,

3. That this operation, ſerious as it is, has been *often* practiſed with complete ſucceſs—

"Are unanimouſly of opinion, that it is the duty of the practitioner to have recourſe to the Cæſarean Operation in thoſe caſes where his profeſſional ſkill deems it proper: and in order to enable men of ſcience, as well as the public, to judge of an operation ſo intereſting to humanity, *ſocial order*, and the progreſs of the art, the ſociety decrees, that Citizen Baudelocque's memoir containing his inquiries and reflections relative to this ſubject, ſhall be printed and diſtributed among the different Adminiſtrative and Judicial Bodies."

"Without adding any commentary to this ſingular reſolution of the Medical Society of Paris, we ſhall only refer the reader to ſome former articles on the ſame ſubject, which he will find in No. II. p. 197, and No. III. p. 308 and 309 of our Journal. It would be needleſs, and inconſiſtent with our plan, to ſay more reſpecting this controverſy which is now at iſſue before the public, and which has been diſcuſſed with equal calmneſs and ſcientific judgment in this country.

Miſcellaneous

Miſcellaneous Facts and Remarks.

IN the "*Recueil Periodique*," &c. No. XXVIII. we find a ſtriking difference of opinion exiſting between two eminent practitioners, BAUDELOCQUE and LAUMONIER, reſpecting the *amputation of the uterus.*

The following is the obſervation of Cit. Laumonier: -"On paſſing the finger under the urinary canal, on the anterior part of the vagina, there was found a gangrenous ſpot of about one inch ſquare. The operation is ſimple; I make a circular inciſion *above* the gangrenous ſpot," &c.

On this treatment Cit. Baudelocque makes the following remark: "A circular inciſion is firſt made in the neck of the tumour, *under* the gangrenous ſpot of which Cit. Laumonier ſpeaks, and conſequently near two inches under the *meatus urinalis,*" &c.

IN *apoplectic caſes of children*, accompanied with fullneſs of the præcordia, and other ſymptoms of plethora, Prof. HUFELAND ſtrongly recommends bleeding combined with emetics, in quick ſucceſſion. The former facilitates the operation of the latter; prevents the danger which they might otherwiſe occaſion; produces an antiſpaſmodic effect; and diſpoſes the emetics to remove the material cauſe, with greater ſafety and efficacy, from having an obvious tendency to produce the neceſſary change in the tone of the whole nervous ſyſtem.

The indications for bleeding, in ſuch inſtances, cannot be determined by the age of the patient, but by the urgency or danger of the caſe, the general conſtitution, the ſtate of the pulſe, and other circumſtances.

In the caſe of a plethoric child, ſix years of age, who had fallen into an apoplectic fit, Prof. Hufeland directed four ounces of blood to be drawn from the arm; and as a ſolution of four ounces of antim. tart. gradually given, produced no effect, preſcribed three grains of white vitriol to be diſſolved in one ounce and a half of water, of which a table ſpoonful was adminiſtered every fifteen minutes. This ſoon operated; the patient vomited a great quantity of mucus and other crude matter; became perfectly ſenſible; recovered his ſpeech and reſpiration; the violence of the pulſe and febrile heat abated; the conuvlſions ceaſed; and the patient completely recovered.

THE danger which always attends the opening of tumours of the knee, commonly called *white ſwellings,* is well known among practitioners, and

and that there is scarcely any chance left for the unhappy sufferer, but amputation of the whole leg. Yet there are a few cases on record, in which emetics have proved of singular advantage in white swellings, upon the same principle as, according to the report of *Riverius*, they have been once observed to cure the hydrocele.

Professor HUFELAND, in his valuable "Remarks on the inoculated Small-pox, and other diseases of children," p. 582, relates the following extraordinary case:

"A youth, 14 years of age, was for a considerable time afflicted with a swelling of the knee, so that he at length was altogether prevented from using the leg in walking. For some other cause, he was obliged to take an emetic, which apparently produced a diminution of the swelling. In consequence of this change, I directed him to continue the use of the antimonial tartar, in small doses, and after an interval of eight days, to take another strong emetic. On the day following, I perceived, with a degree of surprise, that the swelling had decreased half an inch. This method was, therefore, regularly pursued; the emetic was continued every eight days, and the swelling covered with the common plaister of pitch. The tumour gradually disappeared, and the patient was completely cured in six weeks."

IN our last Number, p. 279, we gave a short account of the *carbon* being used in America, as a remedy for habitual costiveness. As this substance, at least in a chemical sense, is possessed of great *antiseptic* powers; and as we are not acquainted with any particular remedy which, *a priori*, is better calculated to remove *bilious, acrid*, and other *morbid matters*, from the *primæ viæ*, where they frequently produce the most important and critical changes, particularly in acute diseases; it appears deserving the attention of the practitioner, to ascertain whether a few doses of powdered carbon recently burnt, might not, in such cases, be attended with the most beneficial effects.

The *external use of carbon*, for instance, in the *hæmorrhoids*, has long been known to our predecessors; and we are induced to quote the following curious passages from "*Hadriani à Mynsicht Thesauro & Armamentario Medico-Chemico*:" *Francofurti*, 1675, 8vo.—Sec. v. p. 133.

"*Pulvis de Verbasco*; ℞. Herb. Verbasq. viridis q. v. infer crucibulo quantum capit, ad summum usque infarciendo, deinde alio contege crucibulo, luto bene muni, igni impone, ut nigrescat eo, non vero in cineres abeat, cumque videbitur satis esse, crucibulum fac refrigescere, atram illam materiam exime, & in subtilem pulverem redige. Postea.

℞. *Hujus pulveris nigri*, unc. i. *Rhabarbari electi*, drach. ii.
Mice & f. pulvis ſubtiliſſimus.

"*Vires & uſus.* Certum hic pulvis eſt experimentum contra condylomata & hæmorrhoides caecas. Cujus uſus eſt, ut aegrotus de *induſio viri trito* ſumat particulam, eamque in uno latere paululum propria ſua ſaliva humectet, de pulvere hoc aſpergat, & ita ſuperimponat toties repetendo quoties opus, donec condylomata & hæmorrhoides illæ caecæ diſpareant, quod brevi tempore evenit.

TYPHUS, particularly if attended with a putrid diatheſis, is one of thoſe diſeaſes in the cure of which the whole Materia Medica is frequently ranſacked, without enabling us to afford much relief to the afflicted. If, what a practitioner in Germany, Dr. KRÜGELSTEIN, has aſſerted with much confidence, in a late publication on that ſubject, be true, we ſhall henceforth be enabled to cure a putrid fever as readily as an ague, and perhaps with more expedition than conſumption is overcome by the digitalis.

According to the experience of Dr. K. the malignancy of *typhus gravior* has in many caſes yielded to *ſtrong doſes of mineral and vegetable acids*, when given alternately in ſuch a manner, that the effect of the ſucceeding doſe may begin, before that of the preceding one has entirely vaniſhed. He goes ſtill farther, and maintains that even peſtilential diſorders may be overcome by the combined powers of theſe acids. His method of exhibiting them is as follows: he firſt gives a doſe of cream of tartar (from one to two drachms, according to the circumſtances of the caſe), and immediately after it, from five to fifteen drops of vitriolic acid diluted with a ſufficient quantity of water. Theſe draughts are ſucceſſively adminiſtered to ſome patients every hour, to others every two, three, or four hours. Dr. K. relates wonderful effects produced by this new practice, but we have ſome reaſon to apprehend, he has miſtaken the nature of the fever. Vid. *Journal of Inventions*, No. I, p. 131.

As the removal of *biliary calculi* has hitherto been conſidered impracticable by any remedies taken into the ſtomach, our readers may not, perhaps, in general be acquainted with a remedy propoſed for that purpoſe by a late French writer, M. DURAND. In hepatic complaints ariſing from biliary concretions, he preſcribes from ten to twenty drops of a mixture conſiſting of equal parts of vitriolic ether and ſpirit of turpentine, to be taken ſeveral times in the courſe of the day, aſſiſted by opium, laxatives, emollient clyſters, &c. according to the circumſtances of the caſe.

MEDICAL

MEDICAL AND PHYSICAL

INTELLIGENCE,

(Original and Selected.)

THE tenth Volume of the Transactions of the French Royal Society of Medicine, and the fifth Volume of the Prize Questions of the Academy of Surgery, have been lately published by the professors of the School of Medicine at Paris, in three volumes, quarto. This extensive and multifarious '*Extract*' contains, as may be expected, a great number of articles equally interesting and useful to medical science. From these we shall extract some particulars of *Vicq-d'Azyr's Eloge*, of *Poulletier de la Salle*, whose first work was a Translation of the London Pharmacopœa, to which he added a Dictionary of the Materia Medica Vicq-d'Azyr, in treating of the difficulty and importance of a complete medical code, introduces reflections which will be the more interesting to our readers, as they relate to the progress of practical medicine, perhaps now as far distant from perfection, as it was at the time they were written.

"The members of the London College of Physicians, uniformly remark, and it cannot be too often repeated, that there is no greater obstacle to the progress of the medical art, than the practice of mixing a great number of drugs, in the same formula. Thus we are ignorant to which of the remedies the success is due; and unless the particulars are ascertained, our judgment must ever remain uncertain.

"Besides, if notwithstanding the labours of the most learned societies, we have not yet a good pharmacopœa, it proceeds only from the difficulty of the task. To mix in the old compositions substances truly active, and to retain them; to search in the writings and practice of the most eminent physicians, what remedies are most successful, and the improvements that can be made on them; to consult even empiricism, and profit by its daring experiments in judging by observation, rather than submitting to the theories of the day; to reject the numerous compounds which are employed without any just cause, as they are compounded without reason; to impart to medicines a uniform strength, the result of which may be calculated; to bring them to a state of simplicity, which can leave no doubt of their effects; and never to deviate from the rules prescribed by chemistry; that is to say, to unite to a perfect knowledge of the history of medicine a profound study of its auxiliary sciences; to acute feeling, a correct understanding; to the greatest prudence, that boldness which is necessary to the attainment of any end—such are the talents and qualities required in those who undertake to regulate our formulæ.

"Already have the discoveries of Bergmann and Scheele produced in this respect a beneficial revolution. The physicians of Stockholm first set the example. Those of Wirtemberg, Geneva, Edinburgh, and London followed. The Medical Faculty at Paris is at this time engaged in the same reform. May we not hope, that all the colleges, impelled by the progress

of

of knowledge, may erase from their dispensatories informal recipes, monstrous assemblages of contradictory substances, whose virtues counteract each other, and which have been sanctioned only by ignorance? The numerous votaries of ancient superstition boast of their brilliant æras; they assert that we have only pulled down, without rebuilding; that we have substituted nothing for what we have destroyed. Vain declamation! too often repeated by the opponents of science.

"The moment the clouds are dispelled, the sun succeeds; and truth, like light, is one of the most valuable presents that can be made to human nature.

"The authors of the London Pharmacopœa having spoken freely against Fernel, one of the most illustrious physicians of the French School, Poulletier complains loudly of that jealousy."

"Poulletier had begun a great number of works which he did not complete. Among these sketches is to be distinguished an Essay on the accidents produced by the admission of air into the different cavities of the human body. From his researches on this subject, it is established that the small intestines are more irritable than the great ones, and that the uppermost parts of the latter possess a greater degree of irritability than the other parts."

Among the other manuscripts of Poulletier de la Salle, of which Cit. G. Roi is the depositary, are to be found the details of experiments on Sensibility; remarks on the means of dissolving the extremity of a leaden probe in the bladder; but the most remarkable tract in this collection, is a number of observations on congestions of the brain. From this work and the inquiries of Walter, is established the great medical truth, that a number of acute diseases terminate in a sort of apoplexy, in which the brain, surcharged with moisture, loses its activity, and sinks under the oppression.

Poulletier is likewise the author of enquiries on soda and kali; and of an analysis of bones, which afforded him, what Gahn and Scheele had merely announced, phosphoric acid and lime. Indefatigable in his other labours, and animated by the same excessive desire of discovering new truths, he examined sedative salt and bile; in the latter of which he discovered spermaceti, which has since been found in a great mass in the cemetery of the Innocents, by the commissioners of the Society of Medicine, who superintend the digging up of the bodies.

Poulletier has also analyzed Farina, and commenced, in conjunction with Fourcroy, in 1786, a series of experiments on the human calculus.

The other physicians, to whose manes Vicq. d'Azyr offers a tribute of praise in this volume, are Bourdois de la Mothe, Thion de la Chaume, le Houx, Duvernin, Dupuy, Destrapieres, Dosan, and Manneti, associates and correspondents of the Society of Medicine.

Among the articles contained in the extracts lately published from the memoirs of the School of Medicine, we find two very ingenious essays, the one by Citizen Jurine, and the other by Citiven Gattoni, with observations thereon, by Citizen Seguin, on the following important question:

"What advantages can medicine derive from the modern discoveries in the art of ascertaining the purity of the air, by the different eudiometers?"

Citizen Jurine's memoir, which gained the prize in 1787, is divided into four parts:

The first relates to the modification of atmospherical air by respiration.

The second treats of the air which is exhaled by the skin, and of the nature of ambient air in different diseases.

The

The third explains the difference of atmospherical air, the air of hospitals, and sick rooms.

We shall examine each of these sections of Cit. Jurine's work successively, taking notice at the same time of the principal observations made by Seguin.

In the first place, Jurine remarks on the opinions, the views, and the simple discoveries of Priestley, the Abbé Fontana, Scheele, Bergmann, and Morozzo, and the solid and luminous theory of Lavoisier and La Place. He next explains the extent and capacity of the lungs, after Hales and Jurin. Afterwards he analyzes the air expired in different circumstances of life and health.

The means of analyzation were lime water, nitrous gas, and the flame of a wax candle.

Experiments were in the first place made to ascertain the difference relative to age, sex, the state of fasting, and the effect of digestion. The air produced by the most complete expiration was then divided into four parts, and successively submitted to a comparative analysis. The other experiments were intended to ascertain the changes produced in the air exspired in fever, the last stage of consumption, blood-letting, respiration in pure oxygen, or in air rendered less respirable from previous respiration. Citizen Halle having already published a part of the results of these experiments, under the article *Air* in the *Dictionnaire de Médec. de l'Encycl: Meth:* it is unnecessary to repeat them.

To this first part of Cit. Jurine's memoir, Cit. Seguin directs his principal objections, which directly attack the accuracy of the eudiometers, the lime water, and nitrous gas, employed.

The other observations relate to the quantity of carbonic acid gas formed during respiration, and the pretended formation of another gas.

In the second part, Cit. Jurine explains several experiments made upon himself, the result of which were, that he disengaged a certain quantity of carbonic acid gas by the skin. Cit. Seguin thinks, on the contrary, that the carbonic gas does not issue through the skin, but is only that formed by the act of respiration, which, descending by its specific weight, in the bath where the Genevese physiologist made his experiments, had displaced the atmospheric air from the vessels he employed.

Citizen Hallé has again offered the principal facts deduced from the experiments contained in the third part. The objection of Citizen Seguin against their result in general, that there is uniformly produced a kind of *mephites* in the intestinal canal, is, that on the contrary, the predominance of azote in the large intestines, according to the experiments of Jurine, ought not to be attributed to the atmospheric air contained in the stomach and intestines losing a portion of oxygen, and the azotic gas becoming by that means more abundant.

The fourth part of this work exhibits a short view of the improvements medicine has received from pneumatic chemistry, which, in the report, is brought down to the present period.

The memoir of M. Gattoni, like the preceding, is intended to give a solution of the physiological problem proposed by the Medical Society, and contains the particulars of a variety of researches and experiments. The author, after relating the history of the nitro-aërial eudiometer, and shewing the incorrectness of that instrument, and its general insufficiency to ascertain the change of the air by the different kinds of miasmata, adopts the eudiometer of Volta, which he describes. The experiments made with this latter instrument, like those made with all the others, have only elucidated the different

different proportions of azote, oxygen, and carbonic acid gas variously modified, by different airs, or by the state of the patients on whom the experiments were tried, or by the different causes of disease.

In a memoir by Citizen Delunel, read before the Medical Society of Paris, the 22d Pluviôse (February 10, 1799), upon opium, and the different preparations of its extract, which also contains an inquiry, whether the resin of opium may be useful in medicine, we find a new process for preparing the extract, which, with the author's observations thereon, we shall give in his own words.

"It is easy," says Delunel, "to administer opium in a dry form, either in powder or pills; but its effects are, perhaps, to be dreaded, on account of the difficulty of dissolving it in simple watery fluids, or in those which it may meet in the stomach. The difficulty consists in liquifying it, without employing as a solvent alkohol or any other spirituous liquor. For this purpose I have employed Rosseau's process, namely, fermentation; with this difference, that the resin of the opium was employed in place of the opium entire. Six ounces of the resin of opium, one pound and a half of honey, and six pounds of water, were exposed together to the sun for six weeks; the fermentation was visible at the end of eight days. When it was over, and the liquor filtered, I found six drachms of resin dissolved in it. I left this mixture for a month, to discover if there actually was formed a combination of the resin of the opium. A spontaneous evaporation with a near approach, in consistence, to extract, the addition of potass and ammonia to the before-mentioned solution, have evinced the presence of the resin of opium. I shall make only one remark, that the sulphuric acid does not act here in the same way as with the juice or extract of several vegetables, that is to say, it produces no precipitation. In considering the process which I have described, the solution of the resin of the opium may perhaps be attributed to a spirituous principle, formed during the fermentation by the help of the honey. To satisfy myself upon this point, I distilled a part of my product; and the liquor distilled contained so little of the principle of alkohol, that I found it impossible to dissolve, by its means, any quantity of resin, and the residuum of the distillation has always remained clear, with a very strong putrid odour; whence I conclude, that the division of the resin of the opium in water is as much owing to its combination with other principles, as with that of alkohol, which has hitherto been believed to be its only solvent.

"I have made the same remark as Baumé, in his 'Pharmacopœa,' when speaking of Rousseau's drops, namely, that there is formed on the surface of the liquor a pellicle, which he attributes to its mouldiness, while I consider it to proceed from the purification of the honey and of the resin itself. The filtration takes away as much as is required, and I have not seen that the produce was the resin itself."

M. Abich, a German chemist, has lately published in '*Crell's Annals of Chemistry*,' a chemical inquiry into the nature and properties of the *honey-stone*. This substance is found in Thuringia, between beds of bituminous wood, and is sometimes near an inch in diameter; it is crystallized in great masses, in a double pyramidal form, with four sides; it bears a great resemblance to amber, but does not, like that substance, become electric by rubbing; its specific gravity does not exceed 1.666.

It further appears from M. Abich's analysis, that fifty parts of this fossil are composed of eight parts of the carbonate of alum, two of carbon, one

one and a half of oxyd of iron, twenty of carbonic acid, fourteen of the water of crystalization emitting the smell of bitter almonds, and two and three quarters of ether. Total forty-eight, one fourth. — The loss of one and three-fourths, and the agreeable odour which was exhaled during the operation, the exact nature of which the author had not been able to ascertain, determined him to repeat his experiments with some variation. The second analysis added to the produce of the first, a small portion of the benzoic acid.

An analysis of the same stone made by M. LAMPADIUS, afforded the following constituent parts, viz. 86.40 of carbon, 3.50 of petroleum, 2.00 of silex, and 3.00 of the water of crystallization. Hence Von Crell is of opinion, that these two chemists have examined different stones.

In consequence of the result of *his* experiments, and on account of the perfect incombustibility of the honey-stone, M. Abich proposes to exclude it henceforth from the class of combustible bodies, and to place it among that of aluminous earths.

The *Academy of Surgery*, at *Copenhagen*, have recently made an important change in the examination for degrees. The candidates are now shut up in the anatomical theatre, where they dissect particular parts of a subject, and reduce the result of their observations to writing, instead of giving them *vivâ voce*.

As several eminent writers have denied the possibility of *distinct impregnation*, it may be useful to collect the facts that seem to favour its existence. In the '*Recueil Periodique*,' No. xxvi. we meet with the following curious account of twins; one a perfect birth, and the other apparently of six months only; communicated by ROCH TARBES, officer of health at Toulouse:

" In the month of September, 1790, the wife of Cit. NOEL, about thirty years of age, and much inclined to corpulency, was in the last month of pregnancy. She had irregular pains for eight days; on the ninth she fell in labour, and I delivered her of a boy in the natural way.

" As I put my hand into the uterus, to get at the placenta, I discovered in the vagina the feet of a second child, enveloped in its own separate membranes: which, being broken, produced a discharge of water, and afterwards a female child, that was delivered by the feet with the greatest facility.

" The two placentæ were perfectly distinct, having each separate membranes. The most remarkable circumstance was, the disproportion subsisting between the two children; the boy being eighteen, while the girl was only twelve inches high; she had no nails, and was not better formed than a child in the sixth month of pregnancy. As she could not suck, she was kept alive eight days with cow's milk."

This case is attested by *Noel, the father*, now surgeon in ordinary, of the second class, to the Military Hospital of Toulouse.

The following Prize Questions have been proposed by the Medical Society of Paris, for the present year:—

1. " To determine the nature of the lymph; its use in the animal economy, and the advantage which medicine has derived, and may still derive, from the modern discoveries respecting the structure and functions of the lymphatic system.

2. " To determine, by experiments and observations, what are the medicinal properties of phosphorus, and the phosphoric and phosphorus acids;

acids; in what diseases they may be employed with advantage, and in what manner they act.

3. "To determine, from anatomical inquiries and inductions drawn from practice, what is the cause of aneurism, according to the nature of the disease, its state, the part which it affects, and the circumstances attending it.

4. "To determine, by accurate experiments, the influence of oxygen in the animal economy, particularly in the treatment of diseases, both internal and external.

5. "To explain the causes and symptoms of *tetanus traumaticus*; to ascertain their diversity, and manner of cure.

6. "Are there any precursory symptoms of the tetanus or trismus traumaticus?"

Professor Schranck, of Ingolstadt, has lately enriched the science of botany with a work treating on that very curious and interesting branch, called *the physiology of vegetables*. The author has taken a particular view of the secondary vessels of plants, by which he understands the down, the spiculæ, the glands, and the vesicles. His principal object is to shew, that these vessels may afford an additional mean of determining with accuracy, the classification of Linnæus, when his distinctions are equivocal; and that such vessels, according to *Malpighi*, form the extremities of those canals in which the fluids, that supply the plant with nourishment, circulate; and which only inhale the air without exhaling it.—Much has been done in this curious branch of botanical science, by the ingenious labours of *Hales*, *Ingenhouz*, *Duhamel*, *Bonnet*, and *Sennebier*, but the German Professor aims at a systematic arrangement of this fascinating subject, which has not been attempted by his predecessors.

Citizen Du Mont Courset has, in a letter to the Editor of the '*Magasin Encyclopedique*,' made some very ingenious observations on an opinion of *Van Helmont* and *Boyle*, quoted by *Boissonarde*, "that plants draw their principal nourishment from water." Some account of these observations will be given in our next Number.

It is acknowledged by all botanists, that an "herbarium vivum" is an excellent mean of promoting the study of this useful science; and that such a work is particularly wanted to illustrate the complicated and extensive class of the *Cryptogamia*.

Mr. J. A. Hose, of Heidelberg, has devoted much time and attention to investigate the nature of mosses, so that he has at length published the first Number, containing twelve plates, or twelve different species, of his "*Herbarium vivum Muscorum frondosorum cum descriptionibus analyticis ad normam Hedwigii.*" This elegant collection is accompanied with copious explanations in Latin and German, which must render it an acceptable present to the English student desirous of acquiring some knowledge of the German. Upon the whole, it may justly be called a splendid little performance; and we have only to regret that the author cannot furnish more than two such Numbers every year.

Cit. Delile, who is now in Egypt, in the capacity of botanist of the expedition to that country, has made several important discoveries of plants. As we propose to give a more particular account of Delile's botanical exploits, in a future Number, we shall at present mention only the discovery of a new species of palm-tree, to which he has given the name of '*Le Palmier Doum*,' and which has not been hitherto satisfactorily described.

In

In our last Number we promised to communicate to our readers two chemical processes lately invented by Dr. Richter. The first is an improved and profitable method of preparing the *crystallized acid of lemons*, from the juice of either fresh or putrid lemons, currants, &c. and deserves the preference over every other hitherto contrived, because when the juices, which is generally the case, are saturated with calcareous earth, the citrat of lime thus produced, retains a part of the extracted matter which cannot be separated by ablution, and which consequently unites with the acid, and renders the crystallization difficult. The acid juice, therefore, should be saturated in a boiling heat with vegetable alkali, the exact quantity of which should be particularly attended to. After this add such a proportion of the muriat of lime, as can be decomposed by the vegetable alkali before employed. This proportion may be ascertained either by previous experiment, or from the table shewing the capacities of the elective attraction of bodies, inserted in Dr. Richter's fifth Number of his "*Reflections on the Modern Subjects of Chemistry.* While the mixture before specified, is boiling for a quarter of an hour, the muriatic and citric acids exchange their combinations; the former produces the muriat of potass, and the latter is precipitated in the form of citrat of lime. This, after being completely edulcorated, must be dried, and afterwards digested in such a quantity of diluted sulphuric acid, as is required for saturating the calcareous earth contained in the citrat of lime: the point of saturation ought either to be determined by previous experiment, or regulated by Dr. Richter's tables of decomposition given in the work before mentioned.

After having properly managed this part of the process, the separated citric acid must be evaporated in a similar manner as is done with the acid of tartar; the sulphat of lime still settling must be carefully separated; the acid is then to be mixed with water in which carbon is diffused, and after the mixture is perfectly elear and pellucid, it is exposed to a slow, spontaneous evaporation, which will produce beautiful crystals of the size of peas. From twenty-six quarts (Silesian measure, nearly the same as English) of the juice of putrid lemons, Dr. Richter obtained upwards of a pound of crystallized acid.—See *Crell's Annals of Chemistry*, Vol. II. p. 380.

The *Citrat of Iron*, to the discovery of which Dr. Richter was led in his stöchiometric experiments, deserves a distinguished place among our officinal chalybeates. And although few physicians on the Continent have hitherto prescribed it as a medicinal remedy, yet we are entitled to say, upon the authority of D. Frank, of Gnesen, that he has found this compound of singular benefit in many diseases.

It is, in every respect, a neutral salt, the preparation of which Dr. Richter performs in the manner following:—Equal parts of iron-filings reduced to powder, and crystallized acid of lemons, or the residuum which is obtained after the crystallization of the citric acid, are mixed; a sufficient quantity of water is then added, and the mixture stirred for some time. Afterwards it is exposed either to the heat of the sun, or kept in some warm place, till it be gradually inspissated, during which time, however, it ought to be frequently stirred up. Of the dry mass, a lixivium must be made with water, which dissolves a considerable part of it. This solution, if evaporated to dryness, affords the citrat of iron in the form of a light brown powder, which is readily soluble in water. The residuum of the preceding preparation, if mixed with more water, slowly inspissated, then reduced to a lixivium, and evaporated again to dryness, produces repeatedly the same result, without any further addition of

citric acid, till at last the iron and lime, in a combined state, remain behind, without possessing any acid. *Ibid.* p. 382.

D Valerian Aloys Brera, Professor of Medicine, in the University of Pavia, has lately been under the necessity of resigning his chair, on account of the political intrigues and party factions that have begun to disturb that ancient seat of the muses. Dr. Rasori, a young man, and a more enthusiastic Brunonian, has been appointed his successor. This change however, we are happy to add, will not affect Prof. Brera's literary publications (Vid. No. II. p. 203 of our Journal); on the contrary, we are authorised to say, that he will continue his exertions with increased zeal. Vid. *Jena Intelligenzblatt.* No. xxix. p. 388.

Among the late *Inaugural Dissertations* which characterise the *Leipzig College*, we meet with two deserving of particular notice. One of these was defended by Dr. H. W. Richter, and entitled: "*Medici ex omni parte perfecti imago*;" the other is a continuation of Vice Chancellor Dr. Hasse's Dissertation, (Sect. II.) *De iis quae* (we would rather say *qui*) *artem difficilem reddunt.*

English literature, and particularly medical literature, is much valued on the Continent, if we may form some comparative judgment from the translations of English works into the German language, which are continually advertised in the Literary Gazette of Jena. There appears to be a spirit of rivalship prevailing among both translators and booksellers, who generally conclude their advertisements with saying, that they have obtained an early copy of the work from England, (sometimes even before it is published here), and thus claim a right of priority in publishing a German translation. Such is the case with the following three works which have been announced in the Intelligence-papers annexed to the Jena Gazette, by several booksellers, now contending for the prior right of publication; "viz. *Haslam, on Insanity*; *Home, on Ulcers of the Legs*; and *Rollo, on the Diabetes Mellitus.*" *Vide Jena Intelligenzblatt:* No. L. for April, 1799. p. 399.

We noticed in our first Number, p. 86, the extensive practice, importance, and utility of Mr. Collier's *new machines for percolation*, (applicable to all fluids, but more particularly WATER) for which he had obtained a Patent: we have now much satisfaction in adding, that on farther enquiry, we highly approve of these inventions, grounded on the only true principles that can shorten this process, which has hitherto been always found tedious in the extreme.

First, he removes the difficulty resulting from the clear fluid passing through its own impurities, by taking a direction from the external parts of the filte ing medium inwards, from which it is drawn off.

Secondly, an urged pressure is employed, which speedily forces it through the percolating pores.

Thirdly, though the apparatus takes up comparatively no room, and the expence is very easy, it is so contrived as to contain more filtering surface in contact with the fluid, than a large stone does when full.

The method Mr. Collier has employed to deprive *any* quantity of fluid of its colour, or putrescent qualities, by a given quantity of charcoal, is likewise highly ingenious.

Mr. Sherwin,

Mr. Sherwin, of Enfield, intends to publish a work on the "Affections both morbid and salutary, excited in the human frame by external absorption.—In the year 1787, Mr. Sherwin communicated a paper on this subject to the Medical Society of London, a part of which, relating to the absorption of emetic tartar, was published in the second Volume of their Memoirs. In the introduction to that paper, which was not published by the Society, appears the following passage, which recent discoveries respecting the cow-pox render striking:

"May it not be conceived, that some particular unsuspected substance, applied to the human frame, in a state of moisture or effluvia, may be imbibed, and excite an infectious disorder, which shall afterwards propagate itself from one patient to another? Small-pox, measles, infectious sore throat, &c. may have been thus originally excited, though mankind may for ever be ignorant of their respective sources."

We learn that Mr. Parkinson, is about to enlarge his work of "*Medical Admonitions*," by the addition of a table, pointing out the degrees of danger manifested by various symptoms; and an Essay on the injurious consequences of the excessive indulgence of children.—Such a work is truly a desideratum in English literature, and cannot fail to be productive of the most beneficial effects, especially among those classes of society, which are prejudiced in favour of quackery.

At a quarterly meeting of the Royal College of Physicians, of Edinburgh, held on the 7th of May, Dr. George Gavin Browne, Physician in Bath, and Dr. Alexander Wilson, Physician in Montrose, were elected Fellows of the College; and Dr. Robert Kennedy, Physician in Edinburgh, was admitted a Licentiate.

Dr. Bradley, having been requested to postpone his summer-course of *Lectures on the Theory and Practice of Medicine*, till after the Hospital Lectures were concluded, proposes to commence on *Monday* the 10th of *June*, at the Lecture-room, No. 21, Great Eastcheap, near the Monument, at six in the evening.

The Course will consist of about seventy lectures.—Terms, three guineas.

Two works of Travels, both possessing much curious and original information, are now in the press, and will speedily be published. One is that of Mr. Browne, the African traveller, who has visited the interior parts of that extensive continent, which have hitherto been considered as *terra incognita*. We have seen a considerable part of this work, and can speak from conviction of its great merit, both in respect to novelty, and the useful information it contains.—The next publication is that by the celebrated naturalist and philologer, Dr. Pallas, of St. Petersburgh, whom the late Empress, with her usual munificence and liberality, sent to explore the *Southern Provinces of the Russian Empire*, in the years 1793 and 1794. These travels, the first volume of which is just published at Leipzig, will be comprised in two volumes, quarto, and embellished with near one hundred coloured plates and maps, illustrative of the manners, dress, and customs of the various Tartar nations, and of different subjects relative to the *Natural History* and *Antiquities* of a tract of country extending to several thousand miles in length, and never before described.—A faithful translation of this splendid work, from the original German into the English language, will shortly appear, by

by *Dr. Willich*, and *Mr. S. Porter*, of Trinity College, Cambridge. —The Engliſh edition will (perhaps the firſt inſtance of the kind, in this country) be ornamented with all the plates contained in the German, and re-engraved by the *original artiſt*, *Mr. Geiſſler*, of Leipzig, who accompanied Dr. Pallas on his travels, and made alſo the drawings and deſigns.

A work which reflects credit on the author, as well as the artiſt by whom the plates are executed, deſerves particular notice in our Journal; and we have now to mention one which will, when completed, be the moſt comprehenſive, correct, and practical ſyſtem of anatomy ever attempted in this or any other country. We allude to the "*Syſtem of Diſſections*," by Mr. CHARLES BELL, of Edinburgh (in folio); the third part of which is juſt publiſhed. It contains the diſſections of the peritoneum; inferences drawn from views of the parts; the ſection of the pelvis; points of ſurgery illuſtrated by that ſection; the contents of the pelvis as ſeen from behind, and a plan of the arteries; of the deſcent of the teſticle; of hernia, hydrocele, &c.—The fourth number of this elegant work, we underſtand, has already left the preſs at Edinburgh, and is on its way to London, where the work is publiſhing by Johnſon, Callow, and other medical bookſellers.

In our firſt number, p. 86, we mentioned the eſtabliſhment of an American Mineralogical Society, in the city of New York: we are happy to announce a ſimilar inſtitution in this country, which promiſes to be of ſingular advantage.—Mr. *W. H. Pepis*, of the Poultry, London, has lately circulated printed propoſals, in the character of Secretary to "The BRITISH MINERALOGICAL SOCIETY," from which we extract the following particulars: They will analyze, *free of expence*, package and carriage excepted, for the proprietors of mines or landed eſtates, whatever ſubſtance they may meet with, in ſufficient quantity, to render a knowledge of the component parts a deſirable object. In return, the Society expects that ſingular or curious ſpecimens of the mineral productions, which may be met with in working the Britiſh mines, will be ſent for the improvement of the Society's Cabinet, which will thus in time become a national ornament.

"When the analyſis of any mineral ſent for examination is completed, the reſult, with an account of the methods employed, will be ſent to the proprietor of the ſpecimen; and if it ſhall contain any new ſubſtance, the probable uſes to which it may be applied will be ſuggeſted."

Profeſſor BLUMENBACH, of Goettingen, in his "Obſervations on the bodily and mental capacity of Negroes, *Magazin für das Neueſte aus der Phyſik*, Vol. IV. ſtates, that having had an opportunity of ſeeing and converſing with many negroes, and procured for his collection a great many anatomical preparations from negro bodies, he is from thence, and what he has read in different voyages, convinced of the truth of the following propoſitions: 1. That between one negro and another there is as much (if not more) difference in the colour, and particularly in the lineaments of the face, as between many real negroes, and other varieties of the human ſpecies: and 2. The negroes, in general, in regard to their mental faculties and capacity, are not inferior to the reſt of the human race.

The fifth volume of the "*Memoirs of the Medical Society of London*" is, we underſtand, nearly printed; it is expected to appear in the beginning of next month.

CRITICAL

CRITICAL RETROSPECT

OF

MEDICAL AND PHYSICAL LITERATURE.

[FOREIGN AND DOMESTIC.]

COMPARATIVE ANATOMY.

An Account of the Regular Gradation in Man, and in different Animals and Vegetables; and from the former to the latter: illuſtrated with engravings adapted to the ſubject. By CHARLES WHITE. Read to the Literary and Philoſophical Society of Mancheſter, at different meetings, in the year 1795. Quarto, 146 pages text, and ſeven ſheets appendix. Three plates folio, and one quarto, 1799, (Price 10s. 6d.) *London.* Dilly.

THIS claſſical volume the author introduces with a modeſt advertiſement, in which, among other profeſſions teſtifying the candour and liberality of his ſentiments, he requeſts the phyſiologiſts, "not to conſider the preſent eſſay as a complete treatiſe on the ſubject, but only as a collection of hints and obſervations for the uſe of others who have leiſure and opportunity to carry on the inveſtigation."

The whole is divided into four parts; in the firſt of which the author treats of *gradation in general,* and after having made ſome ingenious obſervations on the genus of animals called *canis* by naturaliſts; on the *veſpertilio,* or bat; on the *lemur,* or maucauco; on the *ſimiæ,* or apes; on the circumſtance of America being inhabited by a race of animals unknown to the other Continent; on birds and their faculties or energies compared with the ſtructure of their ſkulls and beaks—he draws the following inferences from the facts and obſervations before detailed:

"That there is a general gradation from man through the animal race; from animals to vegetables, and through the whole vegetable ſyſtem. By gradation, I mean the various degrees in the powers, faculties, and organization. The gradation from man to animals is not by one way; the perſon and actions deſcend to the orang-outang, but the voice to birds, as has been obſerved.

"That there are many quadrupeds, inſects, birds, and fiſhes, which appear to be created for particular climates, and cannot live in any other.

"That many animals and vegetables exiſt in the old world, which were not found in the new one, when diſcovered by *Columbus*; and that there are many animals and vegetables found in the new world, which were never known in the old.

"Laſtly, that thoſe animals which were common to both worlds, were only to be met with in the northern hemiſphere, in which the new and old world had probably communications near the north pole. Theſe animals were about twenty-ſix in number."

In the ſecond part of his work, the author treats of the *gradation of man in particular*; of the gradation of bones; the length of the ulna in ſkeletons; the length of the fore-arms of living Negroes and Europeans; the ſkulls of different nations; the facial line; the gradation of the cartilages, muſcles, tendons, ſkin, hair, ſweat, catamenia; the rankneſs of ſmell; the degrees of ſenſible heat; the duration of life; the ſize of the penis, teſtes, ſcrotum, &c. &c. and from theſe multifarious reflections he deduces the following concluſions:

"1. That

"1. That there are material differences in the corporeal organization of various claſſes of mankind.

"2. Taking the European man as a ſtandard of compariſon, on the one hand, and the tribe of ſimiæ on the other; and, comparing the claſſes of mankind with the ſtandards, and with each other, they may be ſo arranged as to form a pretty regular gradation, in reſpect to the differences in the bodily ſtructure and economy, the European ſtanding at the head, as being fartheſt removed from the brute creation.

"3. That the African, more eſpecially in thoſe particulars in which he differs from the European, approaches to the ape.

"4. That the following characteriſtics, which diſtinguiſh the African from the European, are the ſame, differing only in degree, which diſtinguiſh the ape from the European:

In the Syſtem of the Bones.

"The narrow and retreating forehead and hind-head; the flat bone of the noſe; the great diſtance betwixt the noſe and mouth; the ſmall retreating chin; the facial line; the great diſtance betwixt the ear and the forepart of the mouth; the ſmall diſtance between the *foramen magnum* and the back of the head; the long and ſtrong under jaw; the large bony ſockets which contain the eyes, and the wide *meatus auditorius;* the long fore-arm; the flat foot, and the length, breadth, ſhape and poſition of the *os calcis.*

In other parts of the Syſtem.

"The broad and flat cartilage of the noſe; the ſmall *gaſtra-cnemii*, and large temporal muſcles; the long *tendo achillis;* the thick ſkin and ſhort woolly hair; the ſmall brain; the long breaſts of the females; the parts of generation; the paucity of different diſcharges; the rank ſmell; their manner of walking; the power of adaptation to a warm climate; their ſhorter period of life.

"5. That different claſſes of men are not liable to all the diſeaſes incident to mankind, and that they are infeſted with different inſects.

"6. That, in comparing the claſſes of mankind with each other, and with the brute creation, as in the ſecond article, there is a gradation alſo diſcoverable in the ſenſes of *ſeeing, hearing* and *ſmelling*, in *memory*, and in the powers of *maſtication*, but in a contrary order to that above ſtated, the European being the leaſt perfect, the African more ſo, and the brutes moſt perfect of all, in theſe particulars."

In the third part of the work, the author takes a comparative view of the *hair* of different nations, and the wool of animals, in different climates; and after obſerving that the hair in the human race was the ſame 1800 years ago as it is at preſent, concludes this ſection with the following reſult: "Perennial hair, annual hair, and wool, ſeem to be three diſtinct productions, eſſentially different from each other. Of the perennial hair, there are various ſpecies; as, that upon the head of an European; that upon the chin; and other parts of the body. The hair of the negro's head ſeems to be a different ſpecies from the European hair, and not a variety occaſioned by any difference of climate, or from any peculiar mode of living, dependent on their want of civilization."

In the fourth and laſt part of the work, Mr. White ſpeaks, at ſome length, *of the colour or complexion of man.* This highly-intereſting part of the ſubject, the author concludes with the following animated obſervations:

"Different ſpecies of men being once admitted, it will become a proper object of phyſiological inquiry to determine their number and diſtinction, with the merits, excellencies, and defects of each. In purſuing this inquiry,

inquiry, there is no doubt but gradation will afford the proper clue to direct us. What the number of species may be, is not perhaps easy to determine. The four quarters of the globe will each, probably, furnish us with at least one. In Africa, however, there seems to be more than one species; and perhaps the lowest degree of the human race resides there. I am inclined to think that hair, rather than colour, ought to guide us in that quarter; and that it is not the blackest inhabitants, but those with extremely short hair, and a most ungracious appearance, as the Hottentots, who may be reckoned the lowest on the scale of humanity. The Negro, the American, some of the Asiatic tribes, and the European, seem evidently to be different species.

"Ascending the line of gradation, we come at last to the white European; who, being most removed from the brute creation, may, on that account, be considered as the most beautiful of the human race. No one will doubt his superiority in intellectual powers; and I believe it will be found, that his capacity is naturally superior to that of every other man. Where shall we find, unless in the European, that nobly arched head containing such a quantity of brain, and supported by a hollow conical pillar, entering its centre? Where the perpendicular face, the prominent nose, and round projecting chin? Where that variety of features and fulness of expression; those long, flowing, graceful ringlets; that majestic beard; those rosy cheeks and coral lips? Where that erect posture of the body and noble gait? In what other quarter of the globe shall we find the blush that overspreads the soft features of the beautiful women of Europe; that emblem of modesty, of delicate feelings, and of sense? Where that nice expression of the amiable and softer passions in the countenance; and that general elegance of features and complexion? Where, except on the bosom of the European woman, two such plump and snowy white hemispheres tipt with vermillion?"

In an '*Appendix*' the author has enriched this valuable publication with '*Detached Passages selected from Professor Soemmering's Essay on the Comparative Anatomy* (*Corporeal Difference* says the German title) *of the Negro and the European*;" translated by Dr. HOLME. The whole is concluded with a few 'Notes,' by the author.

PRACTICE OF MEDICINE AND SURGERY.

Medicina Nautica: an Essay on the Diseases of Seamen: with an Appendix, containing Communications on the new Doctrine of Contagion and Yellow Fever, by American Physicians; transmitted to the Admiralty by Sir John Temple, Bart. his Majesty's Consul General. Vol. II. By THOMAS TROTTER, M. D. Physician to his Majesty's Fleet, &c. *London*, (Price 7s. 6d.) Longman and Rees.

We have already announced this volume, and its important contents, in our first Number, p. 80.

In justice to the author, we shall first give an account of its particular contents, and then quote a few passages respecting the new doctrine of preventing and destroying contagion, by means of the nitrous vapour; on which subject we refer the reader to Dr. J. C. Smith's work, noticed in our second Number, p. 213.

After a short 'Introduction,' which principally relates to the establishment of a Medical Library, and the delivering of Clinical Lectures, at the Royal Hospitals of Haslar and Plymouth, Dr. Trotter furnishes us (from page 11 to 31) with a "*General Abstract of the State of Health in the Fleet for the years 1797 and 1798.*"

In

In the subsequent chapters (from page 32 to 266) the author treats of *Contagion; Yellow Fever; Small-pox; Epidemical Ophthalmia; on the Effects of Nitrous Acid in the Venereal Disease;—Miscellaneous Communications and Remarks; on Diet; the Malignant Ulcer; Experiments on the Nitrous Gas;* several cases of *Fractures;* one of large *Abscesses in the Thigh;* and one of *Locked jaw;* communicated by different navy-surgeons.

On the subject of destroying contagion, by means of fumigating ships and wards in hospitals with nitrous vapour, we extract the following severe animadversions:

"So absurd and inconsistent," says Dr. Trotter, "are prevailing opinions and habits of imitation, in particular affairs among mankind, that what is called a poison one day, may have the chance to be vended as an infallible remedy the day after. The sulphurated hydrogenous gas, when mixed with a proportion of carbonic acid gas, is no other than the aërial vapour produced from the explosion of combustion of gun-powder, which has been so long used in his Majesty's ships for the destruction of contagion. It affords an ample but lamentable proof of the wavering and imbecility of all human reasoning. Dr. Smith himself, we are very apt to believe, must have been strongly impressed with the dread of unfolding the weak sides of his doctrine, that he says nothing of the primitive principles of his nitrous gas. That must have soon reduced him to inexplicable difficulties; for he must have sought its constituent parts in the final decomposition of animal matter, by putrefaction; and after being evolved from his pipkins, whether in ships or hospitals, from its well-known elective attractions, he must have traced it through all its various degrees of oxygenation, till it became nitrous acid, without imparting a single quality to the air to support life; but on the contrary, to render it so much the worse, by the quantity it required to bring it to the state of an acid. P. 45 and 46.

"After all the latitude which the advocates for fumigation have thus given to its properties for purifying the air, and preventing diseases, it can certainly never be employed in *healthy ships*, for any reason yet produced from experience, or from chemistry. In crowded situations, when the vital portion of the atmosphere is diminished by respiration, it can only be replenished by a fresh column from without, or by some process giving out oxygen. Nitrous gas, though possessing it in combination, cannot give it out under these circumstances; on the contrary, it tends still more to lessen the respirable portion, from its strong attraction for oxygen, which it greedily combines with to the point of saturation. This quality of nitrous gas has been so generally noticed by chemists, that it is employed every where as an eudiometer for measuring the purity of any given quantity of atmospheric air, and is, I believe, the ingenious invention of Dr. Priestley." P. 47.

A considerable part of this volume (from p. 276 to 471) is occupied with the '*Appendix*,' which contains a summary of Dr. MITCHILL's doctrine relative to *pestilential fluids*, as displayed in his '*Defence of the Soap and Candle-makers*', at New York, in March, 1797; and in the three *Dissertations on pestilential Fluids;* by Drs. SALTONSTALL, BAY, and LENT; the last of which we have noticed in our first Number, p. 98.—We regret that our limits will not admit of giving, at present, even a concise account of that ingenious *new doctrine*, but we shall endeavour to supply this deficiency on a future occasion; meanwhile, the reader is referred to a summary of its principles contained in a paper entitled, '*Outlines of Medical Geography*', by Dr. Mitchill, inserted in our third Number, from page 254 to 259.

Essays on the Venereal Disease, and its concomitant Affections: By WILLIAM BLAIR, *A. M.* Surgeon of the Lock Hospital and Finsbury Dispensary, &c. first part of the first Essay. A new Edition, corrected. 8vo. 252 pp, 1799. (Price 4s.) *London.* Johnson.

IN the Preface to this edition, the author says: "The uncommon success of several surgeons in their late experience with the acid (especially at the Woolwich Hospital) has induced me to select a few well marked examples of lues venera, for the purpose of repeating my observations, and of discovering any error or defect there might possibly have been in my practice last year. But no alteration whatever has taken place in my opinion, in consequence of these renewed trials: I therefore still conclude that the advocates for the acid are greatly deceiving themselves, and that too little discrimination has been used in ascertaining the *real* merits of Mr. SCOTT's plan. As a general substitute for mercury in the treatment of syphilis, it is certainly inadmissible. Its efficacy may be most depended on, in cases where a venereal taint is least capable of proof."

Our limits will not permit us to give any number of the cases in detail, nor do we think it necessary; as the author's opinion, formed from the result of these, and many others which he proposes shortly to publish, is given above; and as our readers could only judge of the truth of that opinion by a perusal of the whole number. The cases that struck us as the most decisive among Mr. Blair's own trials, principally in the Lock Hospital, on the primary symptoms of the disease, are, Case 2. p. 126, and C. 12. p. 139. On the secondary symptoms are, Case 6. p. 177; C. 13. p. 189; C. 23. p. 208; C. 9. p. 240; and C. 11. p. 249.

Practical Observations on the Diseases of the Army in Jamaica, as they occurred between the years 1792 *and* 1797*: on the situation, climate, and Diseases of that island; and on the most probable means of lessening mortality among tho troops, and among Europeans in tropical climates.* By WILLIAM LEMPRIERE, Apothecary to his Majesty's Forces. In 2 vol. 291 and 361 pages, 8vo. with eight folio tables. 1799. (Price 13s. boards.) *London,* Longman and Rees.

IN a well-written preface, the author apologizes (indeed without necessity) "for attempting to simplify this branch of medical knowledge, by minutely stating, in a plain, easy language, blended with no more theory than what is absolutely necessary to throw light on his remarks, the result of his observations, during a period of eleven years, constantly devoted to his Majesty's service in warm climates: the last six of these have been spent in the West Indies, where the author performed the duty of regimental-surgeon, and afterwards the more important office of superintending the military hospitals in Jamaica. When not called off by his military avocations, he also was engaged in a very extensive line of private practice in Spanish Town, at the time when the greatest sickness prevailed in Jamaica. From these opportunities he derived the observations which, with some diffidence, he now presents to the public eye."

This work appears to us well arranged, and replete with truly practical information. We regret that it is not consistent with our limited plan, to give a more particular account of its contents; and shall therefore point out, as particularly deserving the reader's attention, the eighth chapter of the first volume, '*On the prevention of sickness and mortality among his Majesty's troops stationed in the West Indies;*' and the eleventh chapter of the second volume, '*On the duties of the regimental surgeon, the attendance of the sick,*

sick, and the arrangement of hospitals in Jamaica.' On each of these topics, as far as relates to naval service, our correspondent, Mr. Henderson, has treated at some length, in the three preceding numbers of our Journal, pp. 91—96; 137—143; and 236—238; as well as in the present number, from p. 340—346. Yet we do not mean to insinuate that these important subjects are exhausted by either of these ingenious writers, or that there is not still ample room for the observation of others.

Essay on the Causes, early Signs, and Prevention of Pulmonary Consumption; for the use of Parents and Preceptors. By THOMAS BEDDOES, M. D. 8vo. 274 pp. (Price 5s.) 1799. *Bristol*, Cottle; *London*, Longman & Rees.

THE author prefaces this 'Essay' with a *View of the Subject*, in which he observes, that nearly one-fourth of the deaths in the British islands is, by the bills of mortality, referred to consumption; an assertion which he endeavours to support by a table shewing the mortality, registered under the heads of *decline* and *consumption*, in one of the parishes at Bristol, where the population is about 10,000, from the year 1790 to the year 1796, being a term of seven years. According to this table, of 1511 persons, 683 are said to have died of consumption or decline: so that *nearly one-half* fell victims to that merciless disease.

In the next section of the Work, the author delivers the *'Plan of the Essay,'* from which we quote the following characteristic passages:

"In search of facts applicable in the sequel to my subject, I shall first engage in a brief inquiry concerning those countries and classes that enjoy more or less of exemption from consumption. Could a doctrine of exemption be established, it might furnish something useful, by way of moral. If we could discern the circumstances on which exemption depends, we should only have to adopt them as nearly as possible into our own conduct. On the other hand, if it shall appear that there are whole descriptions of persons more liable to the complaint, we may stand a chance of collecting from their history a lesson equally useful, concerning the habits to be avoided.

"I should, perhaps, have still longer delayed the publication of these papers, had I not supposed the lately ascertained means of cure (in some circumstances at least of true consumption) likely to awaken curiosity to the whole subject. The situation of Europe has also its weight in urging me forward. Not only is *the night coming, when no man can work*, but I am apprehensive, likewise, that *the tempest is gathering, which may sweep away the workman together with his work.*

As we have already pointed out (p. 384 of the present Journal) the practical tendency of this volume, as far as relates to professional men, we shall at present only call the attention of the reader to its multifarious contents, viz. On *Climate—West Indies; Portugal; Italy; Madeira.—Classes exempt: Butchers; Fish-wives; Sailors; Watermen.—Persons more liable to Phthisis—Animals consumptive—(Of the Dutch)—Scotland—General Inference—Particular Considerations—Of the Phthisical Exterior—The Blood-warm Bath—Bed warmth—Cold Bath—Cold Air—Cool Bath—Approach of Consumption—Cure of Consumption.*

A Detection of the Fallacy of Dr. Hull's Defence of the Cæsarean Operation. By W. SIMMONS, Member of the Corporation of Surgeons in London, and Senior Surgeon to the Manchester Infirmary. 8vo. 103 pp. *Manchester*, Clarkes; *London*, Vernor and Hood; *Edinburgh*, Creech.

IN our preceding Number, p. 308, & seq. we have given a short account of the author's late publication intitled, "*Reflections on the propriety of performing*

forming the Cæsarean Operation," which, we are sorry to find, has given rise to the controversy now carried on between Mr. Simmons and Dr. Hull. We lament that this controversy is not conducted with that temper and decorum, which ought ever to accompany scientific inquiries.

An Account of the Plague which raged at Moscow in 1771. By CHARLES DE MERTENS, M. D. Translated from the French, with Notes. 8vo. 122 pp. 1799.

THIS treatise was originally written in Latin; a French translation of it was published in 1784, at Vienna; and the present translator informs us in the preface, that he has been induced to submit it to the attention of medical practitioners in this country, on account of the danger to which we are exposed, of importing the pestilential contagion from America, or from Turkey and the Levant. "No one," says he, "who is acquainted with the nature of that contagion, can deny the possibility of its importation from America into this country, either now or hereafter, by infected persons or infected merchandise. On the other hand, are we not threatened with a similar danger from the East? In executing the hostile operations, which are going forwards in the Mediterranean, it seems scarcely possible for our fleets and armies to keep clear of contagion. No nation was ever long engaged in a war with the Turks without taking the plague. In this respect they are as much to be dreaded by their friends as their foes. If, in the present contest, Italy, France, and England escape this scourge, it will form an exception to past events, which all Europe must devoutly pray for."

Traité des maladies des voies Urinaires, &c. A Treatise on the diseases of the Urinary passages. By P. J. DESAULT; extracted from the Chirurgical Journal, enlarged and published by XAV. BICHAT, 8vo. *Paris.* The widow Dessault, No. 18, *Cloitre, Notre Dame,* and Nicole, *Rue du Bouloy.*

THIS work is divided into two parts: the first treats of all the diseases connected with the urinary secretion—the second, of those relative to its excretion. The first part is divided into four chapters, in which diabetes, the suppression of urine, its corruption, and the urinary calculus, are successively treated of.

Jos. Frank has taken notice *(Ratio institut clinici &c.)* of two species of diabetes, similar to those described by Dr. Rollo, the one insipid, the other saccharine. According to Dr. Frank, the causes of diabetes have a debilitating effect, directly and indirectly, and exhaust the vital principle, if we may judge from the cases of debauchees and libertines who are subject to that disorder. The celebrated Trenka, in his commentary on the diabetes, thinks that it is the effect of passion and terror. Lastly, Cullen supposes, that it proceeds from a want of assimilation, which is also the opinion of La Place, laid down in his work "*De vera diabetis causa in defectu assimilationis quærendâ,* Goettingen, 1784. From all these opinions, Dr. Frank, suspects that diabetes proceeds from a local affection accompanied with general debility, and prefers in the cure of it a stimulant treatment.

NOSOLOGY.

Divisone delle malattie fatte secondo principi del sistema de Brown.—A Table of Diseases, arranged according to the Brunonian System. By VALERIANO LUIGI BRERA, Professor of Medicine at Pavia, 8vo. 40 pp. with a plate. *Pavia.*

THE system of Brown appears to have met with more zealous advocates in

in Italy, than it has done in France. This little tract is dedicated to Dr. Weikard, physician at Hailbron, one of the most ardent defenders the system has found in Germany, and is accompanied by tables of diseases according to Brown's plan. These tables are an improvement on those of Lynch, which were some time since added to the "Elements of Medicine," and consist of forty-five paragraphs, which Brera has explained by a "Dissertation."

The Brunonian system is too well known to professional men to need any explanation here. The tables, however, in the present work, will be found more perfect than any hitherto published, and well calculated for those who wish to compare other nosological systems with that of BROWN.

MATERIA MEDICA.

Riflessioni medico-pratiche sull uso interno del fosforo, particulamente nell'emiplegie—*Medico-practical Reflexions on the internal use of Phosphorus, particularly in hemiplegia.* By VALERIANO-LUIGI BRERA, 8vo. pp. 46. *Pavia.*

THIS dissertation is dedicated to the Society of Medicine at Paris. It appears that the author prescribed the internal use of phosphorus in a case of hemiplegia, and that so far from succeeding, it was attended with the most fatal consequences. Indeed he candidly confesses, that relying on the observations of others, he had the mortification of witnessing the death of the person to whom it was administered, although he had given it with the utmost precaution; and is certain his want of success could not be attributed to temerity, inadvertence, or ignorance of the remedy employed.

Professor Brera then relates his own observations, as well as those of several other physicians, and gives a short history of the hemiplegia before mentioned.—The body on dissection did not offer the smallest trace of gangrene; but a gas escaped from the stomach resembling a white vapour, and smelling like garlick, which caught fire on the approach of a taper. The coats of the stomach were not in the least inflamed; the intestinal canal was, however, a little contracted, and some red spots were observed on the intestines. It appeared that the two first grains administered by the mouth produced the death of the patient; and that those administered by glisters were not attended with any ill consequences. The author concludes by expressing his surprise at any physician recommending the use of so dreadful a remedy*.

The work, upon the whole, possesses much information on a very interesting subject, and well deserves the attention of professional men.

THE VETERINARY ART.

Memoria sull actuale epidemia de Gatti.—Memoir on the Epidemic raging among Cats, by VALERIANO LUIGI BRERA, Professor of Medicine. 4to. 26 pp. *Pavia.*

THIS ingenious memoir on the diseases of a very useful domestic animal, is addressed to the central administration of the department of Pisa; and contains

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* For further information relative to the internal use of phosphorus, we refer the reader to our third number, p. 283 and foll.

contains a series of observations well deserving the attention of those who wish to investigate, with precision, the epidemics which have often been noticed among them, in this country, particularly during the last year.

The author gives the following accurate description of the malady, as observed by him, at Pavia:

"The cat when first attacked becomes weak, heavy, and unquiet; it avoids the sight of its master, conceals itself, refuses to eat or to drink, and is no longer attracted by the smell of valerian, marjoram, &c. of which it is generally so excessively fond. As the malady increases, the cat with difficulty supports itself on its paws; its hair becomes erect, its tail droops, its eyes lose their lustre, and the abdomen becomes disordered; it makes vain efforts to vomit, and at length sinks under the disease.

From these symptoms, Brera concludes that the malady is a nervous fever, which, although dangerous, is nevertheless curable. Dissection afforded us no morbid appearances, but some livid spots on the bladder, and the gall-bladder dilated and filled with very black bile, the ordinary effect of nervous complaints; nor could he find any trace of worms, from which he concludes, that the disease is derived from the air. Valerian, marjoram, &c dissolved in wine, and alum, garlick, &c. in spirits, were found extremely beneficial in the cure of the disease. As preventive means, he recommends "the killing of the animals infected, and burying them in deep pits; the purification of the air in the apartments where any have died; the administration of a more than ordinary quantity of nutritive food, and the exposing them to fumigations of vinegar."

The work, upon the whole, contains much valuable information; and the purring tribe, which has already found a Homer in Mr. Desherbier, has now an Esculapius in Dr. Brera.

Annals of Medicine, for the Year 1798, *exhibiting a concise View of the latest and most important Discoveries in Medicine and Medical Philosophy.* By ANDREW DUNCAN, Sen. M. D. and ANDREW DUNCAN, Jun. M. D. Fellows of the Royal College of Physicians, Edinburgh. Vol. III. 556 pp. 1799. (Price 7s. boards) *Edinburgh*, Mudie; *London*, Robinsons; and *Hamburgh*, Perthes.

The learned authors of these 'Annals' have, as usual, divided the work into four distinct sections. In the former of these they give an 'Analysis' of twenty-three medical books, among which, the first by Dr. *Currie*, on the effects of water as a remedy in fever; the sixth by *Von Humbolt*, on stimulated muscular and nervous fibres; the ninth by Professor *Soemmering*, on the organ of the soul; and the nineteenth by Mr. *Thomas Brown*, (a promising young philosopher) on the Zoonomia, appear to us the most conspicuous and interesting.

The second section of the volume before us is intitled, '*Medical Observations*,' and contains an account of nine different publications on various medical and chirurgical cases, each of which deserves a place in this collection.

The third section is devoted to 'Medical News,' from which we have already extracted an article of a practical tendency, in our second Number, p. 184.

The fourth section furnishes us with a 'List of New Books' which have appeared during the year 1798, on subjects of medicine, surgery, natural history, and other branches of medical science.

Briefe

Briefe eines Arztes, &c.—*Letters of a Physician, on subjects of Medicine and Politics.* By G. WARDENBURG. Vol. I. Part I. 8vo. 270 pp. 1798. *Goettingen*, Schroeder.

These 'Letters' contain but a small portion of important political matter, but they abound in medical and chirurgical remarks of an useful tendency. During his occasional residence at Paris, or while travelling with the French armies, from May, 1796, to September 1797, the author has collected a number of valuable facts relative to the state of the healing art, as well as the medical jurisprudence of France. His observations, however, would have been better entitled to praise, had they been arranged on a more scientific plan. Nevertheless, considered upon the whole, his contributions form a valuable acquisition to the modern history of Medicine.

The author, in conformity with other intelligent medical travellers, considers the prevailing distinction between the practice of medicine and surgery as one of the greatest obstacles to the progress of the healing art; a distinction remarkable prevalent, and more injurious in France, than in any other country*.

Travels in England, Scotland, and the Hebrides; undertaken for the purpose of examining the state of the Arts, the Sciences, the Natural History and Manners in Great Britain: Containing Mineralogical Descriptions of the country round New Castle; of the Mountains of Derbyshire; of the Environs of Edinburgh, Glasgow, Perth, and St. Andrews; of Inverary and other parts of Argyleshire; and of the Cave of Fingal. In two Volumes with plates. Translated from the French of B. FAUJAS SAINT FOND, Member of the National Institute, and Professor of Geology in the Museum of Natural History at Paris. 8vo. 361 and 352 pages. (Price Fourteen Shillings, Boards) *London*, Ridgway.

These interesting 'Travels' contain a large fund of useful and truly practical information, particularly on subjects of natural history, and the state of the arts in this country. What renders this work still more valuable to the English reader, is the animated and apparently impartial sketches of many eminent characters, to whom our learned traveller had the good fortune to be introduced, and of whom he generally speaks in grateful and handsome terms, Of this description are, Sir Joseph Banks, Dr. Whitehurst, M. Cavallo, Dr. Lettsom, J. Sheldon, W. Herschel, Sir Henry Inglefield, Dr. Swediauer, Mr. M'Donald, of Sky, Mr. M'Lean, of Torloisk, Messrs. M'Comie, and M'Gregor, of Perth, the late Principal. Dr, Robertson, Dr. Adam Smith, Dr. Black, Dr. Cullen, Dr. Henry, and several other gentlemen of Manchester, Dr. Pearson, Dr. Withering, Mr. Benjamin Watt, and Dr. Priestley.

As we propose to extract from these Travels, which abound in useful remarks, whatever has a *practical tendency*, in future numbers of our Journal, under the head of 'Medical and Physical Intelligence,' we shall at present only observe, that we have seldom perused a similar work with equal satisfaction, or left it with similar regret.

Précis d'Observations, &c.—*A Summary Account of the principal Hot Mineral Springs of the Higher Pyrennees, particularly those of St. Saviour, with Cases of Cures.* By Cit. FABAS. 8vo. *Paris.*

The author begins with a description of the Mineral Springs of St. Saviour, one of which he states to be of the temperature of 29° of Reaumur's thermometer. He next proceeds to inquire into the causes of the heat of such springs,

* Vide our first Number, p. 81, and foll.

ſprings, and enumerates the principal medicinal properties of the mineral waters of the Pyrennees, and the volatile ſubſtance they contain, particularly thoſe of St. Saviour. Theſe laſt, as the author ſhews from a number of caſes, act as *vulnerary detergents*, antiſpaſmodics, lithontriptics, depuratives, &c.

Explication des mots d'uſage en Anatomie et Chirurgie, &c.—An Explanation of the terms uſed in Anatomy and Surgery: with a general table of diſeaſes, of operations, inſtruments, and medicines. By Cit. ALLOUEL, 12mo. 360 pp. (2 livres 75 cent.) *Paris*, Remont.

We find in this work a new plan reſpecting the articulations of the bones; ſome remarks on different points relative to ligaments and cartilages; and reflections on the luxation of the humerus, and the rupture of the *burſæ mucoſæ*.

Redevoering, &c.—A Diſcourſe delivered at the opening of the Society of Medicine and Surgery, lately eſtabliſhed at Antwerp. By PIERRE ETIENNE, KOK, M. D. 8vo. 51 pp. *Antwerp*. Schaeſeltes.

The motto of this infant ſociety is, '*Occidit qui non ſervat*; perhaps the converſe of the propoſition would be fully as applicable.—'*Servat qui non occidit*.' Be this as it may, Dr. Kok has here publiſhed an excellent inaugural diſcourſe, which contains, 1. A ſuccinct Hiſtory of Medical Science; 2. An Inquiry into the duties of a phyſician; the practical deſign of the ſociety's motto; and 4. An earneſt exhortation to every citizen to concur in promoting the ſalutary and benevolent purpoſes of a ſociety, inſtituted for the advancement of medicine, ſurgery, and the obſtetric art.

New Medical and Phyſical Publications, in May.

ACCOUNT of the regular Gradation in Man, and in different animals and vegetables, and from the former to the latter. By *Charles White*. 4to. 10s. 6d. boards. Dilly.

Remarks on Mr. John Bell's Anatomy of the Heart and Arteries. 2s. 6d. Robinſon.

Practical Obſervations on the Diſeaſes of the Army in Jamaica, as they occurred between the years 1792 and 1797. And on the means of leſſening mortality among the troops, and among Europeans in Tropical climates. By *William Lempriere*, apothecary to the forces, 2 vols. 13s. boards. Longman and Rees.

Facts and Obſervations relative to the Nature and Origin of the Peſtilential Fever, which prevailed in Philadelphia, in 1793, 1797, 1798. By the College of Phyſicians of Philadelphia. 9d. J. Phillips.

Further Obſervations on the Variolæ Vaccinæ, or Cow-pox. By *Edward Jenner*, M. D. 2s. 6d.

Reports of a Series of Inoculation, for the Variolæ Vaccinæ, or Cow-pox; with Remarks and Obſervations on the Diſeaſe conſidered as a ſubſtitute for the Small-pox. By *William Woodville*, M. D. &c. 8vo. 2s. 6d. Philips and Son.

An Eſſay on the moſt rational means of preſerving Health. With Anecdotes of Longevity. 3s. boards. Wallis.

The Phyſician's Vade Mecum, by the Rev. *Joſeph Townſhend*. Fifth Edition. 4s. ſewed. H. D. Symonds.

An Eſſay on the Cauſes, Early Signs, and Prevention of Pulmonary Conſumption, for the uſe of Parents and Preceptors. By *Thomas Beddoes*, M. D. 5s. boards. Longman and Rees.

Advice to Commanders of His Majeſty's Fleet ſerving in the Weſt Indies, on the preſervation of the health of ſeamen, by *Leonard Gilleſpie*, M. D. Surgeon to the Naval Hoſpital, Fort-Royal, Martinico. 1s. Cuthell.

Eſſays on the Venereal Diſeaſe and its concomitant affections: by *William Blair*, A. M. and firſt part of the firſt Eſſay. A new edition, corrected. Four Shillings. Johnſon.

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A Detection of the Fallacy of Dr. Hull's Defence of the Cæsarean Operation; by *W. Simmons*, &c. 8vo. Manchester. 2s 6d. Vernor and Hood.

The new Illustration of the Sexual System of Linæus. By *Robert John Thornton*, M. D. No. 1, to be continued every three months, and completed in 14 Numbers, 1l. 1s. each. H. D. Symonds.

NEW MEDICAL PUBLICATIONS IN GERMANY.

Guter Rath an Muetter, &c. Good Advice to Mothers, on the most important Points of the Physical Education of Children, in the first years of life. By Dr. G. W. Hufeland, &c. 8vo. 86 pp. *Berlin.* Rottmann.

Einige wohlgemeinte Vorschlæge, &c. Some well intended Proposals for establishing a Medical College, on the most solid and perfect basis. (A satirical Oration.)

Der Philosophische Arzt.—The Medical Philosopher. By Dr. Weikard. Two Vols. 8vo.

—*Versuche*, &c.—Experiments on the irritability of Muscular and Nervous Fibres, Vol. II. 8vo. *Berlin.* Rottmann.

—*Anatomische Beschreibung*, &c.—An Anatomical Description of the external Parts of the human Eye, particularly of the lachrymal Vessels. Translated from the Latin of Dr. J. C. Rosenmuller: with Additions and Improvements by the Author, 4to. with coloured Plates, (Price in Sheets, 6 Dollars, Sax. Curr.) *Leipzig:* Linke.

Abhandlung, &c. A Treatise on various Diseases, which originally arise from Acrimony; such as various Cutaneous Affections, Schrophula, Syphilis. Tetters, Cancer and Gout; together with the Method of Cure, and the most approved Prescriptions. By Dr. J. V. Muller. A new Edition, improved. *Leipzig*. Jaeger.

NEW MEDICAL PUBLICATIONS IN FRANCE.

Extrait de la Partie Medicale des Memoires de l' Institut National, &c.—An Extract of the Medical Department of the Transactions of the National Institute for the fourth Year of the French Republic. Vol. I. No. 4. *Paris.* Baudoin.

Traite des Maladies des Voies Urinaires, &c.—A Treatise on the Disorders of the Urinary Passages. By P. J. Desault, extracted from the Journal of Surgery, enlarged and published by Xav. Bichat. 8vo. *Paris*, Veuve Desault, *Cloitre, Notre Dame.*

Recherches sur quelques Points d' Histoire de la Medicine, &c.—Inquiries respecting some Particulars of the History of Medicine, concerning Inoculation. By Citizen Bourdeau, 12mo. 590 pp. (3 Livres 25 Cent.) *Paris*, Remont.

Le Medecin des Goutteux, &c. The Gouty Man's Physician. By L. Bodin, 8vo. (1 Livre 50 Cent.) *Paris.* Croullebois.

TO CORRESPONDENTS.

We have again been obliged to postpone several valuable papers, on account of their late arrival. We acknowledge the favours received, under the following signatures, viz. from T. P. of Alcester; G. C. of Kidderminster; W. V. of Rochester; C. B. of Hatton-Garden; and S. H. of the Strand:—if our room permit, they shall be inserted in the next Number. We repeat our former request, that Correspondents may add the date of their letters, and their respective designations.